NOVEMBER, 1875.

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THE

AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. IV.—No. 11.] NOVEMBER, 1875. [NEW SERIES.

On the Culture and Trenching of Fodder Corn.

BY AUGUSTE GOFFART, Corresponding Member of the Central Society of Agriculture of France, Secretary of the Consulting Chambre of Agriculture of Romantin, Member of the Central Committee of the Sologne, Agriculturist at Burtin near Nouan-le-Fusilier (Loir-et-Cher.)

To the Editors of the American Farmer:

You have kindly sent me two interesting pamphlets on this important subject,—one published in February and the other in April of the present year, both by the same author, M. Goffart; and the latter, a sequel to the former, containing an elaborate report of a committee of investigation and inquiry, into the process of *preserving corn fodder as practiced by M. Goffart* for the past twenty years. While the first publication is very interesting and contains detailed information in reference to the improvement of the poor district called "Sologne," where the author resides; the report of the committee sent by the society to visit the trenches, inspect the stock and farm of the author, will be most interesting to your American readers. Confining myself in this review and translation mostly to the second pamphlet containing the report, I propose to use such extracts from the author's "letters" in both publications as I may deem specially applicable to the subject. I am led to this more particularly by the fact, that the reporters do not occupy themselves specially with certain details in regard to the culture of the corn forage, rotation, period of harvesting, *et cetera*.

M. Goffart states that since 1852 he has commenced to preserve fodder corn in trenches walled with masonry or otherwise, and that his method of proceeding has always been open to the public.

When he bought Burtin (his farm) in 1846, his predecessor sold to him the harvest of the year, which yielded "only 72 hectolitres (2.7512 Winchester bushels) as much of rye as rusty wheat."

In 1873 he has published the result of the harvest from the same farm of the preceding year, 1872, which was as follows:

Wheat—16.50 hectares have produced 541 hectolitres (33 81-100 hectolitres per hectare.)
Rye—13 hectares have produced 305 hectolitres (23 41-100 hectolitres per hectare.)
Oats—32 hectares have produced 1,417 hectolitres (42 11-100 hectolitres per hectare.)
Wheat—black or rusty—5 hectares have produced 72 hectolitres (14 44-100 hectolitres per hectare.)
Total, 66 60-100 hectares—2,335 hectolitres.

A hectare is two acres, one rood, thirty-five perches; and as one hectolitre—French measure—exceeds two English bushels, your readers can estimate the harvest. He adds: "My wheat, more than two-thirds of it, has been sold for the highest price of the day in the markets of Paris."

The total value of the harvest he estimates at 26,776 francs 50 centimes—about $5,350 of our currency. He gives, also, the weight and value of the straw obtained.

The wheat harvest, he says, was diminished very much on two hectares, by the ravages of wild boars. Beside the crops above given, 6,000 quintals (hundred wt.) of hay from natural or cultivated meadows have been consumed green, and more than 150,000 kilogrammes of Caragua corn produced on one-and-a-half hectares only, and consumed green with Hungarian millet, mustard, et cetera; 800 hectolitres Jerusalem artichokes on five hectares; 200 hectolitres Irish potatoes on 1 35-100 hectare. The whole area, in cultivation, contained 121 hectares, and was marled at the rateof 40 cubic mètres per hectare—(35 cubic feet equal 1 cubic mètre.)

"When I bought the domain of Burtin in 1846, my predecessor cultivated the same area with results in the harvest already stated. Eight unfortunate cows and one hundred and twenty sheep composed the whole stock, living miserably in winter.

To-day, the same area nourishes sixty-eight horned stock, six horses and three hundred mutton.

Marling, deep culture, abundant manuring, commencing at first by using commercial manures, which have been used less and less as farm penmanures increased, have been the means of attaining the relative success I have obtained at Burtin; I say relative, because I have not the pretension to say that my fortune has increased greatly in Sologne, but I can truly affirm that it has not diminished a centime with all my expenditures."

Much that follows in the letter is more of a personal than general interest, especially to

American readers, and after some remarks accompanying the samples of preserved fodder corn, his letter continues—"The corn has played, during my twenty-eight years' practice as an agriculturist in Sologne, an *important and uninterrupted rôle.* At first I cultivated the corn of the country, whose return in forage was not advantageous, because of its small size. I was not slow to replace it with the kind, *dent de cheval,* horse-tooth,—(like our white gourd-seed, I presume,) whose yield was almost triple that of the first.

Finally, after some years I have abandoned the *dent de cheval,* to substitute for it the giant corn, or Caragua. This last kind gives me enormous returns, which sometimes attain to 150,000 kilogrammes (2 lbs. 3 oz. is a kilo) per hectare; and has given me the present year an average of about 120,000 kilogrammes." After speaking of the admirable adaptation of his soils to grow corn, and that long years had convinced him that the maize was the best and most economical forage plant known, he adds, that "never was milk and butter more abundant and of the best quality, than when my cows *live exclusively* on green corn." "Here is the regimen of my stock for a year: From December 15, 1873, to April 15, 1874, chopped corn preserved in trenches; from 15th April to 15th June, rye cut green and chopped; from 15th Jnne to 15th September, mustard chopped and pasturage equally; lastly, from 1st September to 15th December, corn, green or preserved. Thus the nourishment of my animals will depend the whole year exclusively on two plants which never fail me, here in Sologne—corn and green rye. I have at this moment in trenches 250,000 kilogrammes of corn, (250 tons,) February, 1875, that I have chopped by means of a powerful straw cutter and a steam engine of five-horse power." The author then states that his corn is cut from the field, brought to the side of the trenches, chopped up by the machinery, with an admixture of about one-fifth of straw at the same time, and packed closely in the trenches. Wages must be low there, since he states the cost of the chopping and packing does not exceed one franc to one franc ten centimes (20 to 25 cents) per 1,000 kilogrammes (a ton.)

My best corn is from seeding on the stubble of my rye, cut green. The stubble is turned over and a woman follows, sowing the corn by hand in the bottom of the furrow, about sixty kilogrammes of seed (132 lbs.) to the hectare (2 acres, 1 rood and 35 perches.) The rye received in the preceding autumn about 30,000 kilogrammes of stable manure (30 tons.)

In the spring, when the sun is high and warm, I spread broadcast on the rye 400 kilogrammes of the following mixture:

300 kilogrammes, (650 lbs.)....Super-phosphate of Lime
100 " (220 lbs.)..... .....Sulphate Ammonia

The rye produces green forage to the amount of 18,000 to 20,000 kilogrammes (16 to 18 tons.)

The corn seeded on the rye stubble receives no manure."

He then says that he believes "the statements made as to the exhausting character of fodder corn to be very much exaggerated, and that he has received three successive harvests of fodder corn from the same land, and the last was as good as the first; lastly, without any additional manuring I obtain after the corn a full harvest of wheat."

In what concerns the trenching, "the preservation of the corn is certain, provided it is cut or chopped fine and packed with force. I repeat, cut fine and pack firm.

I have never employed salt, except a light layer which I have spread on the heap before covering it in.

I add bundles of rye straw, which I cut with the maize, and with the object of rendering the mixture less moist.

I increase or diminish the quantity of dry straw according as I find the green corn as it comes from the field more or less moist and watery. In general the quantity of straw does not exceed one-fifth part, and this straw, which absorbs the moisture and becomes impregnated with the juice of the corn, is consumed by the stock with avidity and so that they never leave a particle in the manger."

Lastly, the result obtained at Burtin is this: "Five hectares, six at most, will nourish 28 to 30 head of stock the whole year."

The above is taken from M. Goffart's first letter and book; it is followed by a second, describing his trenches and giving other details which I find repeated in the report of the committee, which is so lengthy that the translator must, in advance, beg the indulgence of your readers.

The report so fully explains itself that I deem a word of explanation unnecessary.

Report made to the Central Society of Agriculture of France by a mixed commission, composed of sections, of the economy of stock raising, of the physico-chemical sciences and of generalfield culture, on the question of the *ensilage* (trenching) of corn fodder cut green. Meeting held April 7, 1875:

"*Messieurs:*

A corresponding member of our society, M. A. Goffart, proprietor of the Chateau Burtin, near Nouan-le-Fusilier (Loir-et-Cher) in the centre of the country so poor, but so interesting, which we call the Sologne, has made us a communication in which he has thrown light on the advantages of the culture of corn forage and the possibility of preserving this forage green during the major part of the year; he has presented us also a specimen of the preserved corn, which is consumed by his stock in March, 1875; a specimen designed to justify the preference which he gives to his method of trenching and the preservation of green corn. (It is proper to say the word—*ensilage*—used by the author is not in our dictionaries, and evidently comes from the preposition *en*—in, and *silo,* a furrow or trench; and the author subsequently coins a word—*desensilage*—to unbury or take out of the trenches. The translator has used, therefore, the word *trench* as expressive of the same sense as *pitting or putting* up in *hills, as we do potatoes and other vegetables,* using the earth and exclusion of air as an efficient and economical method of preventing oxidation and its effects.)

"Your commission has thought that the question of the preservation of a forage as productive and of such good quality as corn deserves to be studied, and if the results are as satisfactory as M. Goffart announces, these results

should be called to the attention of the agricultural public. I have been charged with the duty of presenting to your body our report on this important subject.

All the means of preserving alimentary matters interest intensely rural industry which produces these substances, and the whole nation which consumes them.

They contribute, in fact, to reduce the losses, the consequences of alterations and of wastes; they stay the deplorable alternative of waste of food and the dearness which weakens all the branches of public riches. In fine, they assure the regular nourishment of animals and men, which gives vigor and increases the productive power of the nation."

The preservation of green corn borrows a special interest from the excellence of this forage for milch cows, principally due to the considerable variations of the season more or less favorable to its production, and also to the shortness of the time during which the stock can profit by this forage in autumn (if care be not taken to shelter it from the weather)

If the latter part of the season is very dry, it produces a small yield; when, on the contrary, heat and moisture favor its growth, the harvest is so large, that the crop cannot be consumed before frost comes to destroy it. The blades wither become dried in the air and are refused by the stock, while the stalks, which are too large to be cured or dried, become covered with mildew and are in great part lost.

The idea has thus occurred to all cultivators who have introduced this excellent forage into their use, that it would be *extremely desirable* to preserve for the winter that which they could not consume in autumn, and we have known a great many attempts more or less unfortunate, and failures which have been made sometimes in stacks, sometimes by placing it in a drying-room, in order to attain this important end. There were besides many precedents of a kind to justify these efforts. The preserving of leaves of green vines in Le Lyonnais for nourishing animals and goats which yield the celebrated cheese called "*Mont dore*" gives, since time immemorial, excellent results.

It is the same with the furrows or trenches for keeping pomace of cider apples. The preservation of vegetables of all sorts,—turnips, cabbage, and various leaves seasoned with a certain amount of celery for the nourishment of cows in various parts of Germany, goes as far back in the night of time as that of keeping cabbage designed for the food of men, and known under the name of sauer kraut, (sour cabbage) of which we have made *chou croute*—sour crout.

In the north of France, many extensive cultivators, M. Georges, of Orgival near St. Quentin, among others, preserved with success for the past twenty years their beet leaves in trenches; others have applied the same process to their beets cut and trenched, finding a much better preservation than in keeping the roots entire in cellars or ordinary trenches. The pulp of distilleries and sugar refineries entrenched constitute excellent means of keeping them.

M. Vilmorin, fourth of the name who follows with so much zeal and intelligence the noble traditions of a family of which we retain such precious memories, made known in 1870 a process of trenching corn and other green forage, employed in Wurtemburg by M. Reihlen, and his publication very soon produced numerous experiments. Among these, which we may be permitted to cite, was one by the best of the graduates of Grignon—M. Moreul—proprietor at Grignonniere, who since 1870, trenched with great success, corn not cut up but salted in earthen trenches which kept well.

The world is too old; necessity has obtruded itself for a very long time on the efforts of the human race, and there is scarcely anything that has not numerous precedents. But for all men of experience, knowing the great distance which separates a fortunate idea and even successful experiment, from a practice so well established as to become the basis of a regular economical operation, these precedents do not destroy the merit of men like M. Goffart, who attained constant success. If the culture of corn is adapted to the conditions of farming at Burtin, and if the method of trenching *gives uniformly the results of which* the specimen submitted to your examination clearly proves, it merits our praise.

It is this which it was not possible to ascertain, except on the farm itself, and which has induced your reporters sent by the society to visit in person the Chateau of Burtin, to inspect the trenches of the preserved forage,—the subject of the communication of M. Goffart. But in giving his observations, he has thought proper to invite also the aid of two of our eminent confreres, Messrs. Moll and Barral, whose practiced, eye and scientific experience, would be useful. Mr. Barral has taken charge of the specimens for analysis.

The land at Burtin is situated in a valley nearly flat, watered by two small streams of water. The soil is similar to that everywhere seen in Sologne, a mixture of clayey loams and sandy soils more or less light or heavy.

But it appears excellent in the valley bottom which M. Goffart has selected for the growth of his fodder corn. It forms one of those natural prairies which are the essential base of rural economy in Sologne, and which, by reason of its natural advantages, is worth five times as much per hectare as the arable lands in its vicinity.

This soil, like most of the best lands in Sologne, appears soft and easy to cultivate, and its location prevents its participation in one of the gravest faults characteristic of the soils of Sologne, too wet in winter and too dry in summer. (Here follows the description of the natural drainage, with some remarks on the sources of water supply in summer, of which the proprietor has availed himself.)

It is proper to say that corn is perfectly adapted to this soil, and the railroad near by enables M. Goffart to supply himself quite easily with commercial manures, especially the phosphate of lime, the essential element in which his soil is wanting. We can even say that, in these exceptionally favorable conditions, he might replace the varieties of maize which ripen in the country and are not exhausting, but which are little productive, by varieties from South America which are asserted to be very exhausting, but which yield the highest product, such as the dent-de-cheval (gourd seed or horsetooth) and the Cara-

gua corn, whose stalks attain a height of four metres (about 13 feet.) This is what M. Goffart has done with great success.

The sandy soils and those silico-argillaceous of Sologne become burning during the heat of the day and rapidly cool during the night. From these sudden changes result very bad effects for agriculture. It was told us that the wheat harvest of 1874, which everywhere in France has been a good one, failed here from the above cause.

Wheat, since the introduction of marling and above all since the importation of rich phosphatic manures, they cultivated with profit on good lands and which has even yielded 35 hectolitres in favorable years, has yielded the past year in Sologne an insignificant harvest of 4 to 8 hectolitres per hectare. M. Julian des Auges has furnished us the information. It explains the great mineral richness found in certain wheat straw from Sologne the past year. When the grains could not be formed for the want of moisture, the stems of the wheat plant remain so much the richer.

However it may be, there are evidently great advantages in an agricultural country so little favored by nature, and where capital devoted to agriculture runs so many risks, in restraining the domain of the plow from some lands, and devoting it to those most easily cultivated and manured, which, alone, can improve and change their physical condition. It would be proper, then, that forests, woods, so easily grown in Sologne, should cover the major part of the country, and that a semi-pastoral culture, based on plants the most appropriate to the soil, lands seeded to support numerous flocks or herds, and that with these extensive productions, which supply economical food, *a rich, active, intensive culture, to supply resources for the winter*, without which the numerous flocks could not prosper.

Such is the formula, that a wise rural economy proposes to the Solonaise farmers, and which appears to be generally accepted to-day. The culture of fodder corn, with great yield and best results, and its preservation green in trenches, responds completely to this policy.

Nansemond Co., Va. G. W. BRIGGS, M. D.

[TO BE CONTINUED.]

Maryland and its Resources.

The Monthly Report of the Department of Agriculture, for August and September, contains a very elaborate description of our old State, including the general characteristics of its soil, its healthfulness, the population, crops raised, and their adaptability to the climate, the value of farm lands, &c. This paper is extremely interesting, not only to every son of the soil, but also to those from the cold regions of the Northwest, and the immigrant from Europe, who may be looking for homes more consonant to their habits and their ideas of political and religious freedom than those they now enjoy. The cry is not now, as in the days of the philosopher Greeley, to the young man to "*go West*," but the cheapness of labor and land in the more genial clime of the South, the nucleus of educational advantages, and the universal enjoyment of religious and civil freedom, and other advantages "too numerous to particularize," all point to the South as far preferable to settlers than the wild and rugged and inhospitable territory of the far West, where the immigrant, if he survives the hardships, which, in his manly prime, he must undergo, may live to see his land improved and his circumstances more comfortable at the end of his career, but at the expense of every energy through life, the spending of one-half of which on a Southern soil would long since have made him at ease on a farm at the South.

We give, as briefly as we can, a synopsis of the articles in the Report.

Maryland has an area of 11,124 square miles. Its advantages as an agricultural section are probably not well understood, and, therefore, not sufficiently appreciated, at least by the people of other States. Among these advantages are a medium temperature, a healthful climate, a varied surface, soil of average productiveness, proximity to great markets, good railroad facilities, and remarkable abundance of water communication. There are soils of great productiveness and durability, and the poorer lands are susceptible of improvement by cheap and abundant local fertilizers, such as fish-chum, sea-weed, and sea-ooze, oyster-shell and other lime, marl, and the fertilizing refuse of neighboring cities brought cheaply by water transportation. Farms have been increased in value from five to ten fold by these inexpensive means, in connection with clovering, stock-feeding, etc., paying all the time the expenses of such improvement in more remunerative yields. The mean temperature of the year is about 52°; the mean for January varies from 27° to 37°, and for July from 75° to 80°. Rarely in winter does the temperature fall to 10° above zero, though in the past ten years it has a few times fallen a little below zero. Except in a few undrained locations, in the tide-water region, there is exemption from malaria, and the general healthfulness of higher elevations surpasses that of New England, and equals that of the most healthful districts of New York and Pennsylvania.

The population of Maryland is very small in proportion to its capacity to subsist its people, and yet it is almost as densely settled as Pennsylvania, having 70 inhabitants to the square mile in 1870, while the Keystone State had 76. The total numbers, according to the last census, were 780,804, an increase in ten years of 93,845. The number of the colored class was 175,391 in 1860, and 171,131 in 1870. Of the former number, 87,189 were slaves and 83,942 free.

The population of Baltimore comprises 42 per cent. of the whole State.

The State of Maryland produces a full supply of breadstuffs, and has a small surplus to spare, of quality unsurpassed in the United States. Hay is growing into importance,—as the central, northern and western counties are peculiarly adapted to production of the best grasses and o

clover. Dairying and wool-growing are profitable, and conditions favorable to their extension exist in nearly all parts of the State. The Eastern Shore is well known to be unexcelled for the production of fruits and vegetables for northern markets. Grape-growing might be an extensive and profitable industry. Tobacco is still a prominent crop, and the reduction in quantity is more apparent than real, the heavy tax having the effect to suppress nearly half the record of production.

The farm-lands of Maryland, returned in 1860 at 3,002,267 acres improved and 1,833,304 unimproved, were valued at $30.18 per acre. In 1870 there were reported 2,914,000 acres improved and 1,598,572 unimproved, averaging $37.75 per acre. The reduction is presumed to arise rather from the abandonment of lands as farms than from incompleteness of the returns. The same cause reduced the area of farm-lands throughout the Southern States, mainly in the item of unimproved land. The increase in value thus appears to have been 25 per cent. in ten years, notwithstanding the changes and disturbances of the war, including the subversion of the labor system. Not all sections fared alike in these changes. The counties that declined in farm values are Anne Arundel, Calvert, Prince George's, Charles, and Saint Mary's, though the difference is very slight in most of them.

The highest value is in Baltimore county, $88.98, and the lowest in Wicomico, near the southern extremity of the peninsula. Washington, a rich agricultural region on the Potomac, near the mouth of the Shenandoah, a productive and well-improved county, containing farms some of which before the war were held at $100 to $150 per acre, were returned in 1870 at $61.58 per acre, a very high average for farm-lands, but less than their real value in this case. The next highest value was $56.34, in Cecil, the northeast corner of the State,—a good fruit-region, very accessible. The average in Kent, the next county southward, on the eastern shore, was $53.74; and that in Frederick, next east of Washington, on the northern border, $53.68. Those between $50 and $40 per acre are, respectively, Howard, Carroll and Harford, the two former west of Baltimore, the latter on its eastern border. Talbot and Prince George's are valued at very near the average for the State. The counties having lands less valuable are, in their order, Queen Anne, Anne Arundel, Montgomery, Caroline, Dorchester, Somerset, Calvert, Saint Mary's, Worcester, Alleghany, Charles and Wicomico. Alleghany has recently been divided, the western portion being made a separate county, under the name of Garrett.

It will thus be seen the lands of highest price are on the northern border of the State, and those of medium and low price on the eastern and western shores of the Chesapeake. Some of these lands are rich, though, like the tide-water lands of the Atlantic coast generally, a large proportion are only of moderate natural fertility. The facilities for fertilization are remarkable for abundance and cheapness, marl being abundant and near the surface, and sea-weed and fish and oyster-shell lime everywhere accessible and cheap.

Near Baltimore, some dilapitated lands bring $30 to $75 per acre. Timber-lands are worth from $50 to $200. Sedge-fields or worn and neglected lands, if not too near towns and railroads, can be got for $30 to $50 per acre. The best soils are of limestone origin, fine for cereals, and worth from $75 to $200 per acre. A sandy loam predominates near Baltimore, and is found very suitable for gardening and fruit-growing. A third class is a sandy soil adapted to sweet potatoes and peaches.

From $15 to $20 per acre for medium lands, in 1870, the rates for Montgomery lands have advanced to $20 and $35. Some wild lands can be obtained at $8 to $10. These are in pines or sedge, generally a clay soil, susceptible of improvement at a reasonable outlay.

[A very interesting paper is here given, from the pen of Henry C. Hallowell, showing the manner in which the fertility of this county has been improved, which we may hereafter publish, as well as some detailed statistics of the value and productiveness of the lands of each county of the State.]

What Plants Feed On—Animal Excretions.

We have in former numbers alluded to the able lectures of Prof. Goessman, of the Agricultural College of Massachusetts, which are undoubtedly among the most valuable additions to agricultural literature which we have had of late years. From one of these lectures, by Prof. G., we make the following extract, upon a subject which will be found of extreme interest. The conclusions at which the professor arrives in the last paragraphs, are in accordance with what we have so often endeavored to impress upon the attention of our readers. Professor Goessman takes the ground, that whilst full-grown animals return the entire amount of nitrogen consumed in their food, young animals retain some of it for their growth, cows pass part of it in their milk, and sheep secrete it in wool. That the excretions of high-fed oxen contain 2¼ as much nitrogen and 3½ times as much phosphoric acid as those of cows and young stock. From these premises he argues:

"Where the practice prevails of keeping an account of the motions of the various items of plant food, it is customary to allow a loss to the manure pile of twenty-five per cent. of the nitrogen consumed in the food by its entering into the composition of milk, and various textures. Cows or oxen, for example, which require for their daily support from 6.5 to 7 ounces of nitrogen in their food, per 1,000 pounds of their live weight, consume annually from 148 to 178 pounds of nitrogen; deducting 25 per cent. for other purposes, we find that 111 to 128 pounds of nitrogen will be contained in their *fresh* excretions. This quantity of nitrogen is equal to that contained in from 750 to 800 pounds of the Chincha Island guano, or in 3,200 pounds of

bone meal, or in 25,000 pounds of half-rotten barnyard manure.

"The efficiency of animal manure as a nitrogenous fertilizer, depends, to a great extent, upon the preservation of the entire amount of both the liquid and solid portions. The liquid manure contains all the soluble constituents of the food, which usually represent the most valuable portion of the fertilizing substances of the whole excretions.

"The amount of nitrogen contained in the urine of domestic animals differs widely, independent of the kind of food consumed. The nitrogen of the food has been found distributed in their excretions as follows:

In the case of	cows.	oxen.	sheep.	horses.	mean.
Solid excrements,	45.5	51.0	48.7	56.1	49.1
Liquid "	18.3	38.0	51.3	27.3	34.

—*Wolff.*

"The saving of the urine of our farm stock, therefore, deserves most careful attention, not only for the nitrogen it contains but other important items as well, *e. g.*, potash and phosphoric acid. Its presence is essential for the production of anything like a complete fertilizer for the production of crops which served as food; its absence depreciates the value of the stable manure more than half. To suffer the liquid manure to waste means loss of nitrogen and potash in particular. Fresh animal excrement contains but little ammonia; it is soon largely evolved, however, in consequence of a peculiar process of fermentation, and the manure is thus liable to suffer seriously in nitrogen compounds. Here the value of humus, loam or turf, as absorbents in stables, is readily apparent. These substances absorb ammonia freely, hence deserve recommendation for the above purpose. Dry, fresh, vegetable refuse material, as straw, leaves, etc., quickly absorb the liquid manure; but they are little fit to take care of the ammonia before they have advanced to a certain stage of decay, *i. e.*, partly changed to humus. An addition of loam, or better, a daily sprinkling of plaster or sulphate of magnesia, is, for this reason, of particular importance. Partly rotten manure does not evolve ammonia to any appreciable extent. The incorporation of all kinds of vegetable refuse into the stable manure is to be recommended, for such decompose more readily when mixed in this way, and tend to make the stable manure a more efficient fertilizer. Grain and straw contain the same articles of plant food, and differ in this respect merely in regard to the relative proportions.

"Numerous actual experiments made in connection with stock feeding have furnished us with a good mode to calculate, approximately, the annual production of manure for every kind of farm stock. First, the entire fresh excretions of cattle, sheep and horses, amount, on an average, to 50 per cent. of the dry substance (at 212 degrees F.) of the food consumed. Secondly, one-fourth of the weight of the dry food consumed is required in dry straw, for example, to absorb the liquid excrement; and thirdly, stable manure contains, on an average, 25 per cent. of dry substance and 72 per cent. of water. Hence, allowing for absorbents, for every 100 pounds of dry food consumed we have 300 pounds of manure.

"The commercial value of stable manure may be approximately ascertained by allowing for every ton about ten pounds of potash, eight pounds of nitrogen, and four pounds of phosphoric acid; but these figures are an average of a very uncertain series, for we have seen that the quality of animal excrement depends altogether upon the food consumed. The agricultural value of stable manure stands higher than any commercial fertilizer containing these substances in *like proportions;* for barnyard manure not only furnishes plant food, but also acts beneficially on the physical condition of the soil.

"The only serious objection which can be urged against the exclusive use of the stable manure in mixed farming, consists in the fact that *it becomes an incomplete fertilizer*, in consequence of the too general practice of selling crops *without restoring to the soil, in some suitable form, at least their ash constituents.* And this is a serious objection.

"There are two ways by which barnyard manure may be a complete fertilizer for any crop, and these are: to restore the soil constituents sold in the barn produce, either by buying and feeding rich food in addition to the fodder crops raised, or by securing a sufficient amount of plant food by using commercial fertilizers. Which of these two courses is most economical, cannot well be decided on general principles, beyond the statement that the first course deserves careful consideration in the cultivation of special crops."

The Future of Agriculture in the South.

In the following well-considered article in the *Rural Carolinian*, an able and thoughtful writer gives his views on the above topic:

It has always been argued that the supply of cotton could never exceed the demand. That its cheapness would always force it into various fabrics as a substitute for wool, flax, and silk, and in this way the demand would always be in excess of the supply. The logic of events is rapidly driving us to the conviction that we have been laboring under a delusion. It is manifest that the cotton supply is pressing closely upon the demand, or that the cheapness of the article will no longer force its use in various manufactures as a substitute for flax, wool, or silk. The declaration comes from spinners abroad and at home that cotton goods cannot be manufactured at present prices without ruin to the manufacturer, and that some cheaper process of manufacture must be resorted to, or the raw material must go down. Here is a direct issue made between capital and labor, and we have to meet it squarely.

Improved machinery and reduced wages (and with it, of course, cheaper breadstuffs,) or cheaper cotton. Any planter who has enjoyed the experience of cotton planting with the freedman, since the war, must have come to the conclusion that cotton cannot be produced without loss for less than fifteen cents, and he must be a very sanguine individual if he believes times will ever grow any better under our present government.

From all parts of the country we hear of the stoppage of mills, lock outs, strikes, and dissatis-

faction with the state of things, of "the stagnation in all kinds of productive business, the paralysis of industries, the distresses of those desirous to labor with their hands for the support of their families, etc." We see it in every Southern newspaper that there has been a "steady decline of the Southern people in the condition of pecuniary exhaustion since the war, which renders it not only proper, but vitally necessary, that we should look carefully into our system of household economy," etc., and yet we go on in the same beaten track, planting cotton to the exclusion of every thing else—forcing production by all artificial means, and extending the cotton belt up to the very base of the mountains.

Three-fourths of the farmers are unable to strike a lick toward the making of a crop without giving a lien. They give a lien and plant all cotton to buy corn, flour bacon, and mules. Every year it has been growing worse, and the farmers are now more dependent than they were at the surrender. Is it not high time to face the danger and make an effort to rescue the agricultural interest from absolute ruin.

Col. Aiken and other writers have placed this subject before your readers in almost every possible shape, but so far to but little purpose, we fear. The great trouble is the apathy of the planter, the unconquerable aversion to get out of the old ruts. He will readily jump at any humbug that promises impossibilities, but he is ever slow to go systematically about any change that requires time, patience, and system.

The remedy is not to be found in any one expedient—but in general reform. We must practice economy in everything. We must practice self-denial. We must realize the fact that we are poor, and cannot afford to live as we once did. We must try to live within ourselves as much as possible, and not run to the store for everything. Pitch your crops to make your provisions, and then make all the cotton you can. But don't pick out the poorest fields for your provision crops, and let the grass take them. Plant a few acres, put down the manure, and cultivate well.

Five acres of corn, with thirty bushels cotton seed and one hundred pounds acid phosphate to the acre, will make more than ten planted on poor land, with half the work, and the same may be said of oats.

We have a glorious climate, and more land than we have labor. Cultivate the best land and let the poor rest.

Plough deeper, take more pains in preparation, and you will have less trouble in cultivating. Provide yourself with grass lots—barley and rye patches, millet, or corn lots; use every means to keep out of the corn crib.

You will be surprised to find how well you can utilize these little side lots. You will find it in the long run far better than hauling corn and hay from the depot over bad roads, when the crop needs work, or the horses need rest.

THE SOUTHERN RICE CROP.—The Savannah (Ga.) *News* of the 23d inst. says: "We have made some inquiries with regard to the prospects of the forthcoming rice crop, and learn that the outlook is most favorable from the various points tributary and contiguous to Savannah."

Chemical Manures.

Prof Stockbridge, of the Massachusetts Agricultural College, contributed the following on the above subject to the *Scientific Farmer:*

"The objection is urged against the use of chemical manures that, however efficacious they may be in the production of a single crop, yet their continued application would soon result in producing a sterile soil, because the essential element of organic, or carbonaceous material, would become exhausted. That barnyard manure is the only substance that will supply all the materials necessary for the production of crops, and maintain perpetual fertility. It is at once admitted that organic matter is an essential substance in a fertile soil, also that animal excrements—yard manures—are, all things considered, the best manure. But it by no means follows that in the absence of yard manure, or where its price is very high, expedients cannot be devised by which all the requisites of a perpetually productive soil may be secured, while the specific applications are only mineral. There undoubtedly can be in all cases. This may be illustrated by a four-course rotation. Potash and phosphoric acid in some of their compound forms, and in the requisite amounts of each and all for each crop, superior crops may be produced; first of roots, second grain and then grass, or more properly clover two years. If the last crop of clover is plowed in, that, with the large quantity of roots developed by it, would add more organic matter to the soil than an average dressing of yard manure, and in other respects would enrich it more than the remains of the same material after it has passed through an animal organism. By this process every requisite of a fertile soil is provided, the deficiency of yard manure supplied, and culture may be protracted indefinitely without it. This is very good theory and it is extremely difficult to pick a flaw in it, but what is better it is now an established fact."

Interesting Facts in Agricultural Improvement.

Joseph Harris, in the *American Agriculturist*, writes as follows:

It is twenty-five years ago this month since I wrote my first article for the old *Genesee Farmer*, and I have been writing every month since. I have just looked over that old article. I was fresh from the great experimental farm of Lawes & Gilbert, and the article embodied some of their most important results. The burden of it was,—raise more clover, peas and beans, keep more stock, and make more manure. I say the same thing to-day, only I should put first, "cultivate the land more thoroughly and kill the weeds." I thought then that wheat, barley, oats, corn, and other cereals, during their growth gave off nitrogen into the atmosphere, while clover, peas, beans, vetches and turnips retained all the nitrogen they got from the soil and from dews and rains. The theory was simple and plausible, and the practical deduction safe and sound. But more recent investigations failed to sustain this view. The advantage of growing more clover, peas, and other leguminous plants,

however, is as certain as ever. And I could say nothing more to-day than I said then in regard to the advantages of feeding food rich in nitrogen to stock, and saving the manure. But it is well to forget the things that are behind and press forward. There is more to be done, and more improvements to be made during the next twenty-five years than were made in the past twenty-five. We have better implements, better roads, better stock and better prices. I sold barley from this farm twenty-five years ago for 37½ cents per bushel. Now I can get $1.10. Combing wool was not worth over 25 cents a pound. Now it is worth 50 to 60 cents. I sold a lot of splendid butter to go round the Cape in a sailing vessel to California for 12½ cents a pound, and it got there safe and in good condition. I will not say it was as good as the gilt-edged Jersey butter, which now brings a dollar a pound, but at any rate such butter would sell for three or four times as much as it brought then. Pork and good beef, and choice mutton, have doubled in price, and so have eggs, poultry and fruit. Let us be thankful. The indications point all in one direction, and I see clearly written out on the years to come,—"cash for good farmers,"—"good farming will pay better in the future than in the past." Marvelous have been the improvements in our cities and villages. We are a great and mighty nation. But the increase of wealth and population has been greater in the manufacturing districts, and in villages and cities, than in purely agricultural districts. Farmers are now to reap great advantage from this state of things, especially those who furnish better beef, mutton, pork, butter, cheese and wool. And this means better farming, fewer weeds, richer land, larger crops, better stock and more liberal feeding, and more intelligent and prosperous farmers.

Experiments in Wheat Culture.

Dr. Page, professor of practical agriculture in the University of Virginia, gives the following in his report:

Top-dressing in spring with nitrate of soda alone, was very common in England many years ago, but was discontinued for some time, in consequence of its tendency to make the wheat "*fall*," and to produce mildew. It appears now that these two serious faults have been corrected by mixing with the nitrate a moderate amount of sea salt, which prevents the mildew and strengthens the straw. In Norfolk, England, the practice of top-dressing the wheat in spring is almost universal with the best farmers, at the rate of 100 pounds nitrate soda mixed with 200 pounds of salt, applied in two dressings at intervals of three weeks or a month, beginning early in March, and ending about the 20th of April. Mr. Pusey's experiments with this mixture, used as above stated, show an increase of 8¾ bushels of wheat more than produced on land otherwise similarly treated, but not top-dressed with the mixture.

There are a few subjects in connection with the cultivation of wheat that I regard as very important. One of importance is the preparation of the seed wheat, before it is sowed, in order to cleanse it thoroughly from all filth, imperfect grains, and fungi spores, as smut, &c. To accomplish this, my invariable rule is to wash all seed wheat the day before it is sowed in salt and water, or brine, made strong enough to bear an egg. The wheat is poured into a barrel about half full of brine, and is stirred and rubbed with the hands, and as the filth, imperfect grains, &c., rise to the surface, they are carefully skimmed off. The wheat is then taken out, (after pouring the brine off into another barrel) and is spread until it is dry enough to sow, which is usually the case the next day. Another matter which I regard of some importance in seeding the wheat, when it is to be sowed broadcast, is to make a seam for the reception of the wheat, with a double-shovel plough. When the wheat is seeded in this way, it falls into the seams, and is covered by the harrow so well that when it comes up it looks almost exactly as if it had been drilled, and, in my observation, succeeds as well as "drilling," and far better than harrowing in the wheat. It is especially applicable to the thorough seeding of hill-sides and slopes, whether to the north, south, east or west. The southern and eastern exposures have long been regarded as those most favorable, while the northern and western are unfavorable. The eastern and southern slopes are the first to catch the rays of the morning sun, and are the least exposed to the influence of the cold winds from the north and west, which prevail in the winter and spring. It is on this account that "land sloping to the east will have good wheat growing on it, while other parts of the same field, that slope to the westward, will be ruined."

Cotton Seed for Wheat.

The *Southern Cultivator*, in answer to a Georgia correspondent, who asks the best way to make wheat on poor, sandy land, that makes cotton, but will not grow wheat, and whether it will pay to buy peas at $1.00 per bushel and sow down in stubble land, at the rate of one bushel per acre, the first of August, for manuring purposes, says:

Cotton seed, if freely used, will make wheat on almost any kind of land—but if the latter is "very poor," it will require, of course, a very large quantity of them, say four bushels of cotton seed for one of wheat. It is best to precede the wheat with a crop of peas, to be turned under when in bloom. Let this be done one month before wheat sowing time (1st to 15th November.) When that time comes run furrows with a shovel as near together as they can be made without filling each other—sow one bushel of wheat, and cotton seed according to rule given above, and cover with drag or harrow run *across* the furrows. It does not appear necessary to break land very deep for wheat, but the surface soil ought to be thoroughly pulverized. 100 bushels cotton seed and 200 lbs. superphosphate per acre may, if the season be good, make your three acres produce 40 bushels to the acre.

Peas are worth $1.00 a bushel for manuring purposes, but a farmer can raise them at home at less cost. Turn under when in full bloom.

Sowing Grass and Clover with Grain.

One great cause of failure with grass in the South, says the *Rural Carolinian* for October, has been the seeding of the crop with the small grains. This is a common practice at the North, and we were formerly inclined to favor it, but later experience forces us to the conclusion that in our climate at least, the practice is a bad one, and that it is far more profitable to sow each by itself. If sown immediately, (when not already in) grass and clover will, on suitable soil, attain such a growth before the hot weather of next season sets in, as will insure them against injury, without the shade of the grain, which will be injured by the clover and grass, while injuring them in return. In any case, the land for clover and the grasses should be rich and thoroughly prepared by deep, close plowing, followed by harrowing, previous to which a good dressing of super-phosphate may be applied with advantage Brush lightly to cover, and, except on heavy soils, by all means roll the fields with a tolerably heavy roller. This last is an important and too generally neglected process. If you are to sow both clover and the grasses on the same field, it is best to sow the clover by itself, as the seed does not mix well with the grass seed. The various kinds of grass seed may be mixed before sowing.

The Tobacco Crop.

The reports from the tobacco growing districts of Virginia, North Carolina, and Maryland, are generally very flattering. The Brunswick Co. *Advocate* says that "the best crop of tobacco raised in this county for many years is now being cut and housed. It is generally well matured and of excellent shipping quality, and to command remunerative prices only needs to be well assorted, handled, ordered and held until the shippers are in the market to fill their orders. We hope after this crop is disposed of we shall see no more long faces and hear no more complaints of hard times and the scarcity of money. Our farmers have made a most earnest and laborious effort this year to retrieve the losses of the last few that have preceded it, and richly deserve all the success that has attended their efforts."

The Fredericksburg *Herald* says: "The weather continues most favorable for cutting and curing tobacco, and in a week from this time the bulk of the crop will be in the barns. We hear some complaint by some planters that the ground leaves have been burned and the plants thus injured in fields on the high lands, but the loss from this cause will likely be insignificant."

The Goochland (Va.) correspondent of the Richmond *Whig* says: "Our farmers are getting on finely with their crops. The bulk of the tobacco has been cut and housed, and a better crop both of tobacco and corn has not been raised in this part of the country for many years."

The Danville (Va.) *Register* of the 6th ult. gives the following account of the annual meeting of the Danville Tobacco Association:

President P. W. Ferrell submitted his annual report, giving some interesting statistics of the trade and the crops. His report embraces a recapitulation of the sales of leaf tobacco in Danville for the last three years, from which we get the following figures:

Sales for the year ending 30th September, 1873, 15,827,846 pounds for $1,842,820.24, making an average of $11.64 per hundred.

Sales for the year ending 30th September, 1874, 16,174,715 pounds for $2,178,631.75, making an average of $13.46 per hundred.

Sales for the year ending 30th September, 1875, 14,678,421 pounds for $3,002,318.17, making an average of $20.45 per hundred.

These statistics, says the report, show that the leaf tobacco trade of the city is gradually increasing. The President estimates, from all the information he can gather, that the Virginia and North Carolina crop will be 10 to 12 per cent. above the average production, while the Western crop will be about 10 per cent. below.

The Local Agricultural Fairs.

During the past month, a large number of Agricultural Fairs were held in Maryland and the adjacent States, nearly all of which were very successful, and some of them unusually so. Being mostly of a local character, we cannot, of course, do more than give a passing notice to some of the most prominent exhibitors and their offerings on the show grounds.

Harford Co. (Md.) Fair.

The Society under whose control this show is held is a new one, having been organized last year, but the success of the two shows held, thanks to the good management displayed, insures the continuance of this desirable county enterprise.

We were present during one day of the exhibition held 12th to 15th ultimo, and were much pleased to see the enthusiasm and pride evinced at the local displays. In almost every department, these were large, handsome, and diversified. Horses, mostly of a useful type, were numerous and good looking; the cattle embracing Devons, Short-horns, Jerseys, and Herefords. There were also three specimens of the diminutive Kerry breed, not much larger than a good-sized dog, and of a glossy black color. These were the property of H. D. Farnandis, Esq. The Jerseys predominated in number, Messrs. Farnandis and Ramsey McHenry being among the largest exhibitors.

The display of sheep and swine was good and large; and so was that of farm produce, vegetables, fruits and flowers. Among the contributors, Captain C. H. Snow had over 30 varieties of pears.

The trial of speed attracted attention, and provision was made for amusements and diversion; but the too frequent accompaniment of our rural shows, the strolling gamblers with their games of chance, were entirely wanting, and the officers deserve credit for dispensing with these nuisances.

The grounds of the Society are well-located and conveniently arranged; the track is level and the buildings and stalls are neat and amply commodious.

The show was a success financially—there having been on one day, it is estimated, nearly ten thousand persons on the grounds.

The officers of the Society are R Harris Archer, President; C. C. Kinsey, Vice-President; J. M. Street, General Secretary; Herman Stump, Jr., Corresponding Secretary; Jno. T. Spicer, Assistant Secretary, and Wm. H. Waters, Treasurer.

Kent Co. (Md.) Fair.

The competition in the several departments was good, and among the poultry, dairy and bee exhibitors, as also in the household, fruit, vegetable and floral departments, the display was excellent. We annex the awards for the live stock department:

Horses.—Thoroughbreds—G. W. Lockwood, John Brice. Quick Draft—T. Shafer, John N. Dodd, J. S. Cosden, J. P. Nicholson, E. B. Emory, John Brice. General Utility — Robert Smith, Wm. T. Case, C. H. J. Sparks, E. B. Emory, John Brice, Wm. Ford, James H. Gale, A. L. Corey. Drivers and Saddle Horses—Jos. Price, J. S. Cosden, C. H. Hurlock, Wm. H. Vannort. Mules—S. Vannort, John W. Corry.

Cattle.—Short Horns—E. B. Emory took all the prizes, including that for best herd shown of any breed. Alderneys—James H. Gale, S. Vannort, S. Lesates, Wm. J. Vannort, R. Nicholson. Herefords—John Brice. Ayrshires—Jas. Smith. Grades or Natives—James H. Gale. Working Oxen—W. W. Stevens.

Sheep.—Dr. Beck, Jacob Heighly, F. F. Sappington.

Swine.—Large Breed—John Brice, J. L Crew. Small Breed—John N. Dodd, T. A. Hudson.

Carroll Co. (Md.) Fair.

Here, as usual, the exhibiton was very fine, and the competition spirited in all the departments. The premiums were awarded to the several parties named, and we regret our ability in this, and other cases, to mention only the main objects of attraction and value.

For *Alderney Cattle.*—S. P. Slingluff, Wm. A. McKellip and E. Lynch.

Durhams.—W. J. Morelock, and W. G. Rhinehart, were the successful exhibitors.

Fat Cattle.—W. J. Morelock, E. Bankard, and D. H. Byers; and for *Natives*, T. H. Sprenkle, D. H. Byers, Jas. S. Baer, C. J. Woolsey, E. Lynch, and H. E. Morelock.

Horses.—For thoroughbreds, J. B. Barrett, F. J. Crawford, and T. H. Bankard. For quick draft, H. Haines, Wm. Hawks, T. H. Sprenkle, D. Drexler, T. Engler, W. G. Rinehart, Jno. Tracey, and E. Bankard. For heavy draft, J. G. Grumline, W. Lynch, T. Sprengle, and J. G. Fuhsman. Draft horses, D. H. Byers, and Jno. Tracy. For match and single horses, S. Roop, J. G. Grumline, W. N. Matthews, W. G. Rinehart, and J. Zacharias.

Sheep.—J. W. Engler, Dr J. W. Herring, T. H. Sprenkle, and L. A. Harman.

Swine.—H. E. Morelock, E. J. Reid, L. P. Slingluff, T. H. Sprenkle, and J. Tracy.

Alleghany Co. (Md.) Fair.

The area of this fair included the adjacent counties of Pennsylvania and West Virginia, and the premiums were, as usual, quite liberal.

For *Devons*, Gen. B. F. Kelly took all the prizes,—for Short-horns, F. R. Seymour, and for Jerseys, S. H. Fundenberg, and J. H. Stallings, were the principal and successful contestants. Special premiums were awarded to Jacob P. Daniels for best bull, and Thos. Vanners for best cow.

Premiums were also distributed for horses, poultry, vegetables and household productions.

South-Western Virginia Agricultural Fair.

The exhibition at Wytheville embraced many fine animals. A correspondent of the Richmond *Whig* gives a graphic description of the several objects which arrested attention.

Of *Short Horns*, Maj. W. W. Bentley, of Pulaski county, took the herd premium; the bull Aldine, sired by Aldine 3d, and other of his herd, is highly commended. Maj. D. P. Graham, of Wythe, had also some very fine animals, among them his bull Alp Arscom, sired by 13th Duke of Airdrie, No. 5535, dam Poppy 4th, who carried off the first premium in his class of young bulls. Other prizes taken were: Joseph Topham, for cows; I. T. Hale, of Grayson, and N. Oglesby for younger stock.

In *Horses* the improvement is very noticeable. Maj. W. C. Sanders, F. S. Robinson, J. P. M. Sanders, Wm. Compton, Samuel Cassell, N. T. Vaught, Wm. M. Hufford, John Hudson, M. Umbarger and Captain Gleaves were successful exhibitors.

Sheep.—The exhibition of sheep was also a decided improvement over last year's. A recently imported Cotswold buck from England, owned and imported by Mr. Marshall, of Wythe, took the first premium. He is eighteen months old, and is said to weigh over 200 pounds.

Robert C. Crockett, Esq., of Wythe, had eleven extra fine Cotswold ewes, all of which took premiums. Mr. Crockett has been foremost in the enterprise and improvement of sheep during more than twenty years, and is said to have as fine and desirable strain of Cotswold sheep as is to be found on this side of the Atlantic.

Major W. W. Bentley exhibited some very excellent Southdowns, which took the premiums of their class. Major Finney, of Wythe, produced two pens of Merinos, which also secured the premiums of their class.

The only kind of pigs on exhibition were Berkshires, which appear to suit this climate well.

The Piedmont (Va.) Fair

At Culpepper C. H., is reported as being "a great success," and we learn from the *Culpepper Observer*, that "the display of stock was larger and finer than ever; the specimens of handiwork contributed by the fair ladies of the district have been large in number and superior in quality to any heretofore; the farm and domestic products were magnificent; an unusually large number of manufactures are on exhibition; the racing has given more satisfaction, has been better, and afforded more real enjoyment, than ever before; the attendance every day has been large, and thereby increased the gate fees.

The chief winners of *premiums for Short-horns* were Messrs. S. S. Bradford and O. F. Bresee, and others, who were the exhibitors and prize takers.

Mr. Wm. Fullerton exhibited a herd, and took the prizes, and F. W. Chiles those for *Devons*, and B. H. Johnson, P. M. Jones and C. B. Hood, for *Jerseys*.

For Sheep.—The main entries were of long wools, including Cotswold, Leicester, Lincoln, and Oxfordshire, in which Mrs. M. J. Wise and Mr. A. P. G. Cormming bore off the palm. For middle wools, F. W. and Mrs. J. M. Wise were awarded the 1st and 2d premiums; in the 3d class, (Merinoes,) S. S. Bradford took all the prizes.

For Swine—A. R. Daniels, F. W. Chiles, R. J. Mann, and Mrs. Wise, were the competitors with the Essex breed.

Frederick Co. (Md.) Fair.

This Fair was also unusually successful, though the enterprising farmers of this county are always in the front in agricultural matters.

Short-horns.—Mr. L. D. Schnebly, whose cattle of this breed were exhibited at the late State Fair, was also successful in taking the chief prizes at Frederick for imported Cattle, and for Short-horns. St. Mary's College, Jno. T. Best, A. H. Hargate, Jas. Houck, also received prizes in this department.

Devons.—B. J. Snouffer, it seems, carried off all the prizes, having quite a large herd.

For *Alderneys*, there was more competition—Shriver and Preston, and Geo. W. Cramer, took the highest premiums; and the same gentlemen, and Jas. Simmons, R. C. Reich, G. W. Burkey, C. M. Lewis, L. Bentz, G. I. Doll, Wm. Blenttinger, and C. M. Lewis, took the prizes for the several ages.

Horses.—The display of horses was very fine, and Preston and Sinn, Dr. H. W. Dorsey, E. Y. Goldsborough, D. O. Smith, Cyrus A. Font, and G. Zimmerman, were the successful prize takers for blooded horses. For quick draft and saddle horses, F. M. Fraley, E. L. Golderen, Isaac Reich, J. G. Davis, and E. Y. Goldsborough bore off the premiums; and others for quick and heavy draft colts. For heavy draft horses, the prizes were awarded to B. J. Snauffer, Edw. Nicholas, C. B. Withers, and Reuben Sheltenham.

Swine.—For Chesters, Saml. H. Thompson, Jno. T. Best, C. H. Ramsburg, W. H. Blentzinger, and H. C. Thomas, received prizes; and for Berkshires, Wm. Keller, B. J. Snauffer, George Houck, and Christian & Co.

Sheep.—For fine wools, Dr. J. W. Donrey and F. T. Lakin, took premiums; as did Mr. Diller, Geo. W. Shafer, G. W. Gittinger for long wools; for fat sheep, C. E. Deer, best-slaughtered mutton; S. D. Best, for best live mutton; for Southdowns, C. M. Lewis, Jno T. Best, and Dr. D. T. McKinney.

The farm and garden products, and the poultry department, were well filled.

The New York State Fair.

This exhibition, held at Elmira Sept. 27, to Oct. 1st, was a very successful one. The displays in every department were good, the entries being more numerous than for several years. The *Country Gentleman* says the large attendance, notwithstanding irregularities in railway communication with the city and the somewhat threatening weather, though the last day only was really rainy, "furnished abundant evidence to satisfy any doubter that a really good agricultural display, pure and simple, is appreciated by the rural classes and those interested in their prosperity."

The same paper reports 321 entries of cattle, including Short-horns, (fewer than usual,) Devons, Ayrshires, Holsteins, one herd of Herefords, and one of the singular Norfolk Red Polled Cattle, the latter the first ever imported into this country. The horses, though there were no trials of speed, were so numerous that they exceeded the provision made for their accommodation and had to be scattered among the cattle. There were nearly 400 sheep shown and over 200 head of swine.

The display of fruits and flowers was very large and handsome; in the Dairy department, there were over 100 samples of butter and a large quantity of cheese. The machinery and implements occupied two or three large buildings and several acres of field, making a grand display. Farm products were more abundant than usual, and a prominent feature was the collection to which was awarded the $100 special premium of the Elmira Farmers' Club. It was entered by M. C. Baldwin, of Chemung, and was made up of 253 artic'es produced on his farm, including fruits of all kinds, with the different preparations made from the same, as wine, cider, vinegar, jellies, preserves, pickles, &c., cheese, butter, vegetables, grains, seeds, grapes, grapevines, cuttings and layers, samples of experiments in grafting, &c.

Discussions of agricultural topics were held in the evening and well attended and interesting.

The Maryland Horticultural Society.

The meeting for October was held on the 21st ultimo. The proceedings were formal and not of general interest. The Executive Committee was requested to arrange for discussions and the reading of papers on interesting topics at each meeting of the Society, and to cause notice to be given in the papers of the subject to be taken up.

In pursuance of this, it was decided at the November meeting to discuss "How to encourage a taste for horticulture with the general public," and Mr. August Hoen was requested to open with a paper. It was also determined to hold on the same evening a Chrysanthemum show, and prizes were ordered to be offered as follows: For the best 12 chrysanthemums, in pots, $5.00; second best, $3.00; third best, $1.00.

For the best display of chrysanthemums, cut flowers, $5.00; second best, $3.00; third, $1.00.

The American Pomological Society.

We mentioned in the report in our last issue of the meeting of this society at Chicago, that upon the invitation of our Maryland Horticultural Society its next session had been fixed for Baltimore.

This is a compliment both to our State and to our young society, and especially that various other cities were candidates for the honor.

It is now incumbent upon all our horticulturists, and especially our fruit-growers, to prepare in time to welcome this association to such a display of our home products as will do credit to our State and section.

Correspondence.

The True Theory of Farming.—No. 10.

Application of Manures—Proper Condition for Administration.

Messrs. Editors American Farmer:

After six thousand years' experience, disputes prevail as to deep and shallow plowing, the best means of severing clods with the harrow, &c.,—whether the harrow should be square, oblong, triangular, &c., or whether the teeth shall be vertical, or inclined, long or short, round or square, sharp or dull, &c.

So lime, dug out of pits and spread on the land, has been feeding the plants and nourishing the soil for two thousand years, and yet a diversity of opinion now exists as to whether it is manure at all, and whether it does not exhaust—that is, impoverish—instead of nourishing the soil.

It is also said that it fertilizes, or more adroitly stated, in a word without meaning, it "*stimulates*" the soil or the crops, "causing larger crops to grow," as brandy bloats to abnormal flesh;—that it "Enriches the fathers and impoverishes the sons," &c.

In the absence of general principles and right reason to guide, such are the absurd and impossible fancies engendered in a long night of ignorance, and fostered by the learned, who profit by obsequious acquiescence in popular superstitions, and the ruin of the people they pretend to enlighten.

None go the length to say that the presence of lime and other essential plant-food, as the phosphates, nitrates, &c., in a soluble state in a fertile virgin soil, exhausts it, for this notion does not prevail in the legends; it is not popular—all agree such a soil is fertile, and promises a rich heritage to the sons of the pioneers who own it. But when they are washed away, in the process of cultivation, and it is proposed to *replace* them, even in smaller quantities, a raw-head and bloody-bones, thin as the air of ghosts, confronts the appalled farmer and warns him that they will "stimulate" an overgrowth of plants, and exhaust the soil. Frightful examples are arrayed, wherein some of them were applied, inducing wonderful fertility, but in a few years causing a relapse into a worse state than before; as we might array new rents in old garments where the patches failed to lap.

And so, this spectre points to the waving fields of early golden heads, as the harbingers of ruin to the sons of improvident sires; and to the phosphate factories, "because," says the hollow voice, "some of them do not contain the plant food they purport to possess, and are therefore frauds, and because some *do* possess it, in available condition of solubility, and are therefore worse than worthless,—exhausting, instead of enriching the soil."

And it comes to this,—that if the farmers have no crops, they must confront the evils of failure and unrequited toil with the loss of as much plant-food, by washing away, as if heavy crops had responded to their labor; and, if good ripe harvests reward their industry—their '*children are impoverished*" by the rapacity of the parents.

We have seen it advocated to put on manures in an unsoluble state because, they say, that part which the plants assimilate exhausts the soil, and what they do not appropriate thirsts them to death, by drying up the water, in dry, and washing away in wet seasons.

Rain-waters, fresh from the sky, and running waters, from the earth, are valuable manures, and their constituents cannot be dispensed with in the growth of any plant. These waters wash away more plant-food in one year than the heaviest crops can assimilate in a whole decade, whilst lime and the phosphates have never been known to take away anything.

Now if those who teach that these exhaust the soil, were capable of following their benighted argument to legitimate, or rather to any possible conclusion or deduction, we may next expect to find them, with more show of common sense, on their knees, devoutly praying for perpetual drouth, and denouncing the purchase of new, or the mending of old clothes, because, forsooth, new garments wear old and the old become "entirely exhausted," relapsing into a worse state in a few years than before the patches were sewn on.

The author of a popular book, read with avidity by thousands of farmers, in an argument against the use of guanos and other so-called stimulating and exhausting fertilizers, inspired by views or notions inscrutable to the candid seeker of truth, arraigns guano for the wholesale ruin of a State. He bewails the exhaustion of the soil of that State to such a degree, that it would only produce three or four bushels of wheat per acre. At this point of prostration, he says, Peruvian guano was introduced, and thereby the soil *stimulated* to the production of threefold more grain, amply remunerating the farmer for his labors, the use of the land, and the cost of the guano. But after a few years the soil became less productive than it was before its introduction, notwithstanding the continued use of guano. And *therefore*, says the distinguished author, the guano was a curse. This word "therefore" is an easy road to any conclusions.—So, in the light of what I have already said to the attentive reader, here, in New Jersey, is a case of a patient languishing for food, and beef is administered, which restores him.

He afterwards, however, thirsts for water, but being unable to make his wants known, through ignorance of attendants, who imagine as beef once revived him it will "therefore" always do so, without regard to the cause of his present prostration, beef is "therefore" again administered, and the state of the patient is worse than before; the substance that saved life now only intensifies the disease.

If the patient had been allowed to die yesterday for want of *beef*, he could not die to-day for want of *water*.

So, if the soil of New Jersey had gone to utter sterility, for want of the constituents of guano, twenty five years ago, it would not now be suddenly exhausted, notwithstanding the guano, for want of something else not contained in, or supplied in sufficient abundance by the guano.

In those Atlantic districts where the soil was completely exhausted for *want* of the constitu-

ents of guano, the farmers are charged with ignorance for not resorting to guano.

When it *was* used and *prolonged* fertility, but for lack of other substances failed to *perpetuate* it, the farmers are gravely charged with "*stimulating*" and exhausting their lands, *by the use of guano.*

Under a clear comprehension of the laws of plant growth, no such absurdities or impossible fancies could arise; and a thousand doubts more rational disappear, and we only wonder that they ever arose.

Hoping this brief evidence of the necessity of *system of thought* and more consistent reasoning may induce a careful study of what follows, it will now be attempted to look into some of the *general* principles pointing to the most economical means of sustaining and restoring fertility by the application of manures—that is, anything that enriches the land, whether it be water, lime, potash, phosphoric acid, magnesia, ammonia, or other plant food.

Here is felt more than ever the difficulty and magnitude of the task, and the necessity of unbiased attention on the part of my readers.

Before entering upon the various sorts and forms of manures, and the different modes of preparation and use of each, the leading principles which apply to all alike, will claim brief attention.

The finest possible state of division, and thorough dissemination as equally among the atoms of the soil as possible, are essential requisites in the preparation and application of all kinds of fertilizers, whether in the form of barnyard or other putrescent manures, or lime, phosphates, guanos, bone dust, or any conceivable preparation.

All agree that they should be thoroughly intermingled in the soil; but when it is proposed to reduce them to the utmost degree of fineness, by which alone they can be perfectly disseminated, or caused to unite chemically with the atoms of the soil, and thereby be retained, and given off, as they are in a virgin soil, to the plants only as they require them, we meet with diversity of opinion.

And when it is proposed to add chemical to mechanical means, in rendering them soluble, whereby alone can they be available to plants, or be truly assimilated into the soil, as in virgin soils, we are confronted with still more irrational, and therefore more stubborn objections.

The only means by which they can possibly be thoroughly incorporated, and chemically, and therefore, *permanently*, united with the soil, is urged by false teachers as *facilitating their removal from it.*

Notwithstanding recent speculations, of interested parties, to the contrary, no plant has ever been known to assimilate solid substances.

The word soluble is a relative and indefinite term. The diamond is considered an insoluble form of carbon in reference to pure water or to the action of plants; yet it is soluble in acids, and is decomposed by heat.

When a substance is placed in the soil in the solid form of fine powder, or already dissolved in water, it is immediately absorbed into and united with clay and other constituents of the soil, forming compounds of various degrees of "*solubility.*" This is accomplished by means of water which cannot thus act on insoluble matter.

The vital solvent and absorptive action of plant roots, like other vital forces, are little understood.

The power of dissolving substances insoluble in pure water, or in the water of the soil, is commonly attributed to the exudation of acids from the absorptive parts of the rootlets, which dissolve the substances preparatory to absorption. Thus they are able, when sufficient does not abound in solution, to dissolve substances, soluble in respect to their peculiar vital action, but sometimes insoluble in water.

If it were otherwise the plant-food of forest soils would wash away before the trees are felled. On the contrary, we find the plant food held in forests where it is more soluble to plants; and washed away from cultivated fields, where it is less soluble. This is explained by the fact that the soil in the forests, protected from washing during rains, and held together by a perfect net-work of ever living roots; while in cultivated fields the roots only partially protect, and frequently only during a part of the year, and by cultivation the soil is constantly being disintegrated and washed away, in body, winter and summer, plant food and all.

The lamented Liebig drifted, as he himself so eloquently said, on "preconceived order of thoughts," into the prevailing impression, that substances placed in the soil in a soluble condition would wash away, and well nigh missed the great influence his works have justly attained.

To escape the imaginary danger of washing away, he converted his soluble alkaline and phosphatic powders into an insoluble state, expecting the soil to render them soluble again, but he afterwards found the action of the soil was the reverse.

The consequence was, with all his knowledge and skill, and every appliance of his fertile genius, his splendid theory, that had cost the labor of his life, utterly failed *in practice.* Because, applied in that state of insolubility, they would not dissolve, under the combined influence of the soil and the roots, with sufficient facility to feed the plants.

Although he thus, in fine powder, thoroughly intermingled with consummate skill in the soil, every substance of soil food, the plants languished, because, to them, everything was insoluble and impossible of assimilation.

On the discovery of this one mistake, which uprooted every other precaution, and rendered all his labors nugatory, he expresses his emotion in the following remarkable words: "Having discovered the mysterious cause of my manure's inefficiency, I felt like a man who recovers from moral prostration, and now, seeing and perceiving clearly this most natural law, my previous blindness seems quite inexplicable to me. Indeed, human intelligence is often singularly limited, and fails to perceive the *nearest and simplest facts when they do not harmonize with one's preconceived order of thoughts.* Having deprived the alkalies of their solubility, and imbedded them, by a melting process, into silicious or argillaceous earth, I had *impeded their amalgamation with the soil and done everything in my power to weaken their action.*

"Only then, after so many years, I understood the reason of my failure; every single necessary mineral ingredient was supplied to the soil, but my own science had made them *ineffective*. Alas! I, myself, have done everything to impede the acknowledgment and the general propagation of my doctrine. I had been my own worst foe, by the erroneous composition of the artificial manure, which otherwise might so much sooner have restored the fertility of the exhausted soil." FREEDOM.

Our French Letter.

Messrs. Editors of the American Farmer:

The Use of Commercial Fertilizers.

Agriculture cannot but benefit by the increasing demand for commercial manures. Superphosphate of lime, sulphate of ammonia, and nitrate of soda, are at the present moment in high request, and to efficaciously combat fraudulent agencies the chief manufacturers have determined to directly supply purchasers themselves. The saving in commission fees will cover the expenses of transport. The employment of industrial manures, however, is accomplishing a revolution in a direction that many do not approve. To produce farm-yard manure live stock is necessary; to support the latter, grass lands and an organized culture are required, involving a staff of laborers, implements and machinery, and, above all, an intelligent superintendence. It is no secret that many landed proprietors in France have well nigh ruined themselves by the rearing of stock and the production of root crops, and now adopt, since some ten years, a plan of cultivation which dispenses with farm-yard manure, cattle, servants, &c. It consists in the adoption of a rotation, comprising, first year, wheat; second year, oats—each manured with superphosphate of lime and sulphate of ammonia, at the rate of six hundred weight of the former and seventy pounds of the latter per acre for the wheat, and about half these quantities for the succeeding oat crop. The third year the land is devoted to buckwheat, clover or mustard, plowed down green; fourth year, wheat unmanured. The average total expenses over the four years amounted to something better than one-half the produce for the three years, and yielded a net profit of fifty francs per acre. If this system spreads, the conditions of agricultural work and the situation of the rural classes will be sensibly modified.

The Maturity of Domestic Animals.

An interesting discussion is going on respecting the period when live stock ought to be considered as having reached the adult state. This period, it is asserted, commences when the animal has achieved its dentition; that is to say, when the milk incisors in the lower jaw have been replaced by permanent teeth. But at what age, with the horse and ox for example, do all the teeth become replaced? Before races of animals were improved, development was slower, and dentition consequently took longer time for completion. But since cattle, sheep and swine have been ameliorated, the result has been to hasten the arrival of the adult state, considered as precocity. At agricultural shows, prizes are awarded to cattle twenty-five months old, to sheep ten or fifteen, and to pigs twelve months of age. It is alleged that the meat at these ages not only possesses all the maturity equal to that of animals arrived at double the age, but also that dentition is advanced, and even the perfect knitting of the bones. On the other hand, it is maintained this precocity cannot take place in the case of horses, whose vitality is concentrated in locomotion, energy and the power of endurance.

Analysis of Potatoes.

Professor Woltny, of Munich, has made a series of analyses of potatoes, to test their richness in starch, and has found that the latter increases with the size and weight of the tubers, the difference being as much as two per cent. between large and average-sized potatoes. For purposes of distillation he therefore recommends large, and for feeding smaller tubers, the latter containing more nitrogen. For the same reason he suggests that, for seed, cuttings should be preferred of the large potatoes, as germination requires matters non-azotised.

Buckwheat as Fodder—Pasturing Rye.

Buckwheat, when given as fodder, has been observed to produce vertigo, alike in cattle, sheep and pigs; in the case of the latter, furious delirium ensues, with difficulty to keep on the legs, and ultimately finishing by a long sleep. Inflammation of the head, red and staring eyes, are the characteristics when sheep are attacked. It is only from eating the flowers that the malady is produced. Bees are even said to fall off the flowers in a state of stupor, after alighting sometime thereon. An agriculturist states that he allows his sheep to crop the winter rye in spring, and finds the plant grows more rapidly afterwards. The sheep return to the rye at intervals of three days. By this process, also, he has been enabled to induce the sheep to eat damaged hay, first shaking out and airing the latter, and watering it with a solution containing twenty per cent. of salt.

Preserving Corn Fodder.

The preservation of green maize, &c., in trenches, to be consumed in winter and early spring, is at present a demonstrated success and a great boon in the case of dry climates. Now, while this arrangement tides stock over till April, a dry spring ensuing can deprive cattle of green fodder from the close of May to the middle of July. M. Lecauteux has applied the trench system to spring green rye and red clover, cutting the former in two-inch lengths and mixing two parts of rye with one part of clover. The mass kept well from May till July, and was highly relished by the cattle. The best time to cut the rye is just when the ear is shooting, as if more matured the absence of moisture prevents it being well preserved. The best coating for the mass, before being covered with earth, is heather, as it acts as a ventilator and condenser for the generated gas.

Novel Deodorizers.

M. Robierre draws attention to the important disinfecting properties of the refuse of hemp factories, which completely absorbs the most noxious gases. Strange, chopped hay and straw possess also deodorizing powers, and which may

explain why hay strewn on the floor of a room which has been newly painted removes the disagreeable smell. All these substances derive their efficacy from their porosity. At Angers gardeners employ their refuse hemp for bedding purposes.

The Phylloxera Cure.

M. Faucon, the author of autumnal submersion of vineyards for six weeks or two months, as a perfect cure for the phylloxera, and the only one up to the present found to be successful, has this season been rewarded by a yield of wine double that produced in ordinary years. His vines are exempt from the bug, while those of his neighbors, where the inundation scheme is not employed, are nearly destroyed.

The Foot and Mouth Disease.

Cocotte, the French name for the foot and mouth disease, is making terrible progress. The malady is more inconvenient and annoying than fatal. Although only known since 1840, Gasparin described a disease perfectly analagous which attacked sheep in 1817, and the remedies then employed were exactly those now patronized. As in the case of every epizootic malady, those animals badly fed or cared for are the earliest to be affected. In this country, and indeed on the Continent generally, the plan of having the cattle sheds low, in order to give room for a barn overhead, is highly objectionable, and favors the spread of distemper. When an animal is attacked with *cocotte* it is at once separated, covered with some sacking, and deprived of food for two days. The two principal points to be kept in view are to calm external irritation, by means of nitre and tannin solutions, and to fight the fever, by purging the blood of the poison introduced therein. Towards the afternoon of the second day the animal is administered, by means of a horn or a bottle, a linseed or meal drink, and next day some slices of beet and the leaves of that plant. In the case of milch cows the udder should be fomented every second hour with the tannic acid lotion, bathing the teats to draw off the milk, and thus prevent inflammation. The milk for eight days afterwards ought to be thrown away, as if given to pigs it would prove contagious.

An Ingenious Contrivance.

The veterinary surgeon of one of the chief railways of Paris has invented, for the use of its dray and bus horses, a cheap and simple machine for self-irrigating the feet in case of any inflammatory ailment. A box containing four cocks is placed on the animal's back, by means of a skeleton sort of saddle; an India rubber tube communicates between this box and a vessel placed above the manger, containing a solution; from each cock in the box resting on the back of the animal is a tube descending to each fetlock, terminating in a kind of gaiter, inside of which is a perforated plate, so as to allow the solution, or simple cold water, to fall in a continuous fine spray over the sprain, &c.

Destruction of Dodder.

Continued evidence is adduced of the destruction of dodder by sulphuret of calcium, a salt which costs five francs per hundred weight. When the weed is perceived the clover or lucerne is at once cut as closely to the ground as possible, and after removal the soil is dusted with the salt, at the rate of one-quarter to one-half pound per square yard. A strong dose is necessary to make it act, which it immediately does, by burning up the dodder roots and stimulating the crowns of the clover and lucerne.

Useful Recipes.

An excellent means to preserve harness, and indeed all kinds of leather trappings, from the injurious effects of the ammonia of stables, is to add a little glycerine to the grease ordinarily employed.

To fatten fowls in ten or fourteen days, they ought to be placed in a wooden cage two feet above the soil,—the bottom of the cage to be strewn with wood ashes daily. The food should consist of rice, boiled in skimmed milk, adding a spoonful of carbonate of soda. The poultry ought to receive also pure water twice a day, and, like the food, in earthen vessels. The chief object is to maintain great cleanliness, and to avoid the presence of acid. The flesh of fowls thus fatted is highly praised.

To destroy smut, rust, ergot, &c., in cereals intended for sowing, the seeds are placed in several steeps, and when the floating grains are removed the rest are rubbed in lime. Instead, therefore, of a steep composed of a salt of copper, diluted sulphuric acid, urine, or dissolved guano, M. Roge prepares for his steep a solution of a salt of lead. A greater number of seeds have germinated when thus treated, as compared with other means, and subsequent vegetation has been more rapid. F. C.

Paris, October 2.

A Plan to Destroy Rats.

Messrs. Editors American Farmer:

Your correspondent, of Queen Anne's Co., Md., wishes some plan to destroy rats, and I will give him my experience. Some years ago my dogs took to killing my cats, and before I could break them they killed them all and the rats took possession, and my plantation was soon literally alive with them. I set to work to destroy them by every means I could invent; I set box traps, deadfalls, steel traps; used rat exterminators, strychnine, and raised a rat dog, and in the meantime commenced raising more cats, and for a long time it seemed I did not gain much ground on them. You might go in my barn in mid-summer, where there are a hundred barrels of corn in bulk, and you would scarce see a ear of corn not part shelled by rats, and go there any time in the day and throw open the door and you could see fifty or a hundred at a look. Before housing my new crop I built me a box in one corner of my barn of thick plank ten inches wide, eight or ten feet long, and made another same length small enough to slip into it from the outside of the barn by cutting a place large enough to insert it. I bored two-inch auger holes on the side of the boxes at intervals so that they would exactly meet when the inside box was slipped to its place. I housed my new crop on it and in a few days I drew out my box and found there were rats in it. I stopped the auger holes and carried it out in the field and called an old negro man to help me kill them. I got a stick, set the box on end, opened the bottom

hole and at it we went, and when we got through we counted up and had thirty-five grown rats. So I thinned them out by the time my new crop of cats were able to go at them and gave them up to them and they have kept them under ever since. So if your correspondent will get him some cats, and if male cats alter them, which will make them stay at home and grow nearly a third larger, and if they trouble his barn build the box and house his crop on it he will succeed in getting clear of them. There is nothing like cats for rats.

Bertie Co., N. C., Sep., '75. FARMER.

Curing Quills for Pens.

Messrs. Editors American Farmer:

The quills of several birds are used both for writing and drawing. Those which are usually prepared for this purpose are those of the goose, the swan, the bustard, the turkey and the crow. The first are those most commonly used for writing; they are gathered in the spring by persons living in the country, and by them sold to the preparers. For writing, the quills of the goose only are gathered. These quills are of two kinds: 1st, those which fall naturally in the moulting of the birds; 2d, those which are plucked from the birds after they have been killed. The first are generally the best and preferable to the others. Naturalists have observed that the wings of birds are partly formed of a certain number of quills or large feathers, called in France "Remiges." These quills are divided by them into primaries, which are 10 in each wing, and adhere to the metacarpal bone; to secondaries and scapulary. Among the feathers the primaries are almost the only ones prepared for writing, and among these there are only five (5) which suit; 1st, that which is called the tip or end of the wing, which is the roundest, shortest and least valuable; 2d, two which come next, and are the best; the two which come next, and are inferior to the last.

A good quill for writing ought to be of medium size, rather old than newly prepared. It ought not to be either too stiff nor too weak; of a regular form, and round, so as not to turn of itself between the fingers; it is clean, pure, transparent or nearly so, elastic, and without any white spot, which would prevent it from splitting regularly. In resting it upon the paper it ought to bear plumb upon the point or nib. It ought to split clear and straight, without being either sharp or brittle, and not become fuzzy too soon from use.

We will now give a process used in Germany, and appears to furnish products as much esteemed as the quills of Hamburg or the best English. Steep the quills for 10 or 12 hours in a cold solution of 1 part by weight of good potash and 10 parts of pure water, the solution to be filtered before use. The grease which coats the quills is converted into a solution of soap. Thus prepared, they are plunged for 5 minutes into water, rain water is the best, heated to the boiling point; they are then withdrawn and rinsed in cold water, and then dried in a dry and slightly heated atmosphere. It now only remains to render them firm and sound. For this purpose use a pot sufficiently large and deep to allow the quills to remain upright, in bundles of not more than 15, slightly tied together, and yet remain 3 or 4 inches from the bottom.

A false bottom of wire cloth would best answer this purpose. This pot is then closed by a cover, in the centre of which is a hole for a thermometer, placed in such a manner that its bulb may be in the middle of the boiler and the principal part of its scale above the cover. All being thus arranged, the boiler is put upon a furnace or stove containing a few lighted coals, and which heats the air which it contains and raises to 60° R. (167° F.) When the quills are sufficiently softened to bend, when they are briskly scraped with the back of a knife, each one is taken separately in the left hand; rested upon the knee, or a table covered with a woolen cloth, then it is pressed with a knife at the upper end of the quill, then drawn back under the knife, and, at the same time, restoring it to its original roundness.

This is accomplished more easily and expeditiously by drawing it several times through a piece of flannel or woolen cloth to take off the scale and polish it.

When very stiff quills are desired, this process may be twice performed, but care must be taken not to submit them to a second operation until after they have parted with all the heat acquired in the first process.

Sometimes the tubes of the quills are colored. The colors most commonly given are yellow, blue and green.

After they are prepared, they are assorted according to their weight, size or their quality, or even whether they come from the right or left wing. They are then put up in packages of 25, of which four make the hundred.

Beaufort Co., S. C. R. C.

Management of Soft-Wooded Plants.

Mr. Meehan says on this subject: "To have such things as Primulas and Cyclamens in flower during the winter season, a temperature rather higher than that required for the ordinary stock of greenhouse plants will be necessary; and these things, therefore, should be placed at the end nearest the boiler, and the ventilators opposite them kept closed, for the air admitted at the other end of the house will suffice for them. On the other hand, such things as Cinerarias and Calceolarias, which do much better in a temperature comparatively cool and moist, should be placed in the coldest end of the house, and at a moderate distance from the hot water pipes, so as to avoid their being subjected to the drying influences of the artificial heat. They should also be exposed as little as possible to cold currents of air. If mildew breaks out upon any of these plants, dust the foliage at once with good flour of sulphur; for there is nothing to surpass sulphur as an antidote to mildew, which at this season of the year will soon do a considerable amount of injury to the plants. The plants should also be examined frequently, and all dead and decaying leaves carefully removed before they are able to contaminate the healthy foliage.

Live Stock.

The Holstein Cattle.

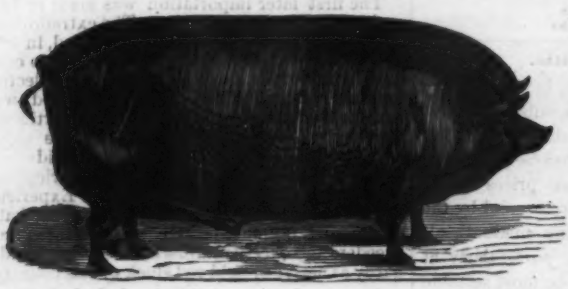
The interest is daily increasing in this country as well as in Europe, upon the subject of live stock, more especially for the dairy. The immense demand for Short-horns can be estimated, in some degree, by the enormous prices which are being paid for approved strains and by the numerous sales which are being made in all sections of the country, where, particularly at the West, they are supposed to be most suitable to turn into beef the vast crops of corn which can be raised on the prairies, as the most economical mode of disposing of that product of the soil. While it is admitted that no other breed can begin to compare with the Short-horns for this purpose, yet it is equally certain that but few of the most devoted friends of that breed claim for them a precedence over, or even equality to, others for the purposes of the dairy.

Without intending here to discuss the question as to the best stock for the increasing demand of our cheese and butter factories, we cannot but hail with pleasure the introduction of any other varieties of cattle than those to which we have been accustomed, which can be made to add to the supply of our milk stock; and perhaps the most valuable in this respect was on exhibition at our late State Show,—the Holsteins, imported by Mr. S. M. Shoemaker, of this city. As we hope to see further importations of the same character, and to herald their more general introduction throughout our State, the following brief history and sketch of this breed we put on record for future reference. It is extracted from the Sandwich (Illinois) *Free Press*, for which paper it was prepared by a correspondent:

The Holsteins were introduced into this country about the year 1625, by the "West India Company," and other importations were subsequently made into the State of New York by early Dutch settlers there. At a later date—about 1810—the late Hon. Wm. Jarvis, the importer of Merino sheep, brought over a bull and two cows, which he placed upon his farm in Vermont, where they were bred successfully for a time, and acquired a good local reputation; but not appreciating the value of purity of blood in cattle, they were mixed with other breeds. It is entirely to later importations that the Holstein stock mainly owes its reputation at the present time in this country, and all the cattle in the Western States recognized by the Holstein Breeder's Association as pure Holsteins, have sprung from said importations, and will be found duly recorded in the Holstein Herd Book. The considerations which, in the first instance, led to these importations, were a confident belief in the decided superiority of the dairy cows of North Holland, in comparison with all other breeds, and also in their adaptation to the climate of New England.

The first later importation was made in 1852, and consisted of a single cow. The extraordinary good qualities possessed by that cow led, in 1857, to a further importation of a bull and two cows, and, in 1859, four more cows. In the selection, animals of undoubted purity of blood were obtained, which was substantiated by certificates by the burgomaster of Opperdoes, the mayor and magistrate of the community of Midwould, and the secretary of the Dutch Agricultural Society for the District of Opmeer. Experience so far has proved these cattle to be remarkably docile and quiet in stable and pasture; sure breeders and excellent nurses; easily kept and as hardy as native or "old red stock of this country."

An examination of this stock, it is believed, will afford conclusive evidence that while the English cattle breeders have been laboring to perfect the beef-producing properties of the Short-horn breed, the North Holland and Friesland farmers have been improving their dairy cows, until they have attained a superiority over all other breeds; and this is further exemplified in the fact that various writers upon dairy husbandry have, in furnishing illustrations of the best type of dairy cows, selected their models from the Holstein race. Allen, in his "American Cattle," gives an accurate portrait of the Holstein cow, Lady Midwould. She stands, he says, "the model of a perfect milker, with all the mammary veins and udder glands in the highest state of development," and he says further, "North Holland is eminently a dairy country, and the cows of the farmers and dairy men there receive a care and attention beyond any other domestic animal used. Their surpassing excellence appears to be in the milking qualities, coupled with large size and a compact massive frame, capable of making good beef. They are invariably black and white in color, spotted or mottled over the body. The horn is short and the hair is short, fine and silky. The lacteal formations in the cows are wonderful, thus giving them their pre-eminence in the dairy." These cattle have been confined to the Eastern States, until lately—two years ago—a few males were brought here by Geo. E. Brown, and two were purchased by Dexter Sexery, who, upon thorough examination of the stock, and being a practical dairyman of seventeen years' experience, concluded they were just the cattle to increase the production of his dairy. He therefore went East and returned with five head. The present year he lost his best one, but immediately purchased two more to fill the vacancy; and at this time eight full bloods and forty good grades, mostly heifers, besides a large number of choice grades, are scattered among his neighbors, and all are proud of them and will not sell them at any common price for natives. Many are surprised when they see the stock, as they expect to see small cattle, but on the contrary they find them large; the males ranging from 2,000 to 2,800 pounds, and females 1,500 to 1,800 pounds—which is equal to the best Short-horns. Only a few years and we will begin to see an improvement in our stock, and a decided gain in the amount of cheese produced by the factories, which will show the difference between native stock for the dairy and *good* stock bred for dairy purposes.



STONEWALL,

Yearling Essex Boar, the property of Dr. T. J. Wooldridge, French Hay, Va. As regards form and general appearance he is a very fair representative of the English strains of the present day, having been bred from animals imported by Dr. W. directly from Mr. G. M. Sexton, of Suffolk, England, who is now regarded as the most celebrated breeder of Essex Pigs in that country.

A writer in *The Illustrated Midland News* (an English paper) says: "Mr. Sexton's farm is pleasantly situated near Ipswich, overlooking a broad reach of the river Orwell. His famous piggeries are as interesting in their way to visit as a cattle show. There is a strong family likeness among all his pigs; they are familiar to the visitors to the royal and local agricultural shows for many years past. They are known by such noble names as Stockwell, Queen Mary, Hermit, Marksman, Hippia and Achievement. They are often named after promising young horses entered for the great races, and it has happened several times that the first prize pig at the meeting of the Royal Agricultural Society has corresponded in name with the first horse at Epsom, on Derby day, in the same year.

Mr. Sexton has also taken much pains with the Berkshire breed, but when he has brought it to the highest degree of perfection by combining the tribes of Messrs. Swanwick, Humfrey, Stewart, King, Tombs and Sir Robert Thogmorten, he does not like them as he does the Essex. They are too much, he says, of the Gurtha and Wamba disposition; too fond of rooting among acorns in the woods, instead of delving gently in an avenue, like the Essex; in fact they are *too active by half*, and want extravagant feeding."

Sheep Husbandry in Georgia.

The Department of Agriculture of the "Empire State of the South" is happily placed under the charge of a man who seems to understand the needs of his fellow-agriculturists, and to be honest in his efforts to serve them. A part of the duty of the commissioner, under the law organizing his office, is "to investigate and report upon the culture of wool, the utility and profit of sheep-raising, and all the information upon this important subject, that he may deem of interest to the people of this State." Pursuant to this, Dr. Janes addressed a series of questions to sheep-raisers through the State, and from their answers gathers some very interesting information, published in the shape of an unpretending manual, a portion of which in a condensed form we give our readers.

Of those who have tested crosses in Georgia, 98 per cent. report the cross of the Merino and native the most profitable.

The average annual profit on capital invested in sheep-raising is 63 *per cent.*

The average annual cost per head of keeping sheep is only *fifty-four cents.* The average cost of raising a pound of wool is only *six cents*, whilst the average market price of unwashed wool is *thirty-three and a half cents.*

An average of seventy-four lambs are raised for every hundred ewes, notwithstanding the ravages of dogs.

Ninety per cent. of the correspondents report *dogs* the *principal* and generally the *only* obstacle to sheep husbandry, and many that the business is abandoned from the want of protection. There were in Georgia in 1870, 93,153 sheep less than in 1860; and in 1875, 100,142 sheep less than in 1870. Or, in fifteen years, instead of an *increase*, as there should have been, of 100 per cent., a decrease to show of 38 per cent.

Why a branch of industry paying an annual profit of 63 per cent. on capital invested is languishing, and in many cases entirely abandoned, is shown from the fact of there being in the State 99,415 dogs, and that between April 1st, 1874, and April 1st, 1875, they destroyed 28,625 sheep, worth $73,852, or nine per cent. of the value of all the sheep in the State.

Correspondents report that 100 sheep regularly folded will fertilize, so as to double the crops, *eight acres* a year. If this area was planted in cotton, which the sheep now in the State will fertilize, (25,544 acres) the increase on that area would be 12,772 bales, worth at $50 net per bale, $638,600.

If, says the commissioner, there were two million sheep in Gorgia, as there would be if properly protected, the increased production at the same rate from the effects of their manures would be worth $4,000,000 a year.

If the Legislature, at its next session, as is hoped and believed, will adopt such measures as will remove the present obstacles to the enterprise, thousands of the farmers of Georgia will immediately embark in sheep-raising, and millions of acres of land now idle, and an expense to their owners, will be rendered profitable for sheep walks and gradually improved in fertility; and a way will be opened for a tide of immigration into the State of thousands of the best, most quiet, peaceable, industrious and profitable laborers, who nearly double their number annually, demand no wages, do not steal or commit other crimes, labor assiduously through the year, feed and clothe themselves and their mas-

ters, make no strikes, utter no complaints, and never "die in debt to man." Such a laborer is the *sheep*, the best and cheapest in the world.

Is it not remarkable—and the question is as pertinent in Maryland and Virginia as it is in Georgia—that such laborers cannot lie down to rest at night in a civilized community without risking their lives at the hands (mouths rather) of idle and lawless neighbors, the dogs, who spend the day in idleness or sleep, and the night in murder and theft?

We shall refer, soon again, to this little handbook of Dr. Janes and give some further extracts. Its material is carefully prepared, and the language used effective and convincing.

Fraud in the Jersey Cattle Business.

Hy. Fox, Esq., U. S. Consul at Plymouth, Eng., whose jurisdiction includes the island of Jersey, transmits to the Department of Agriculture a letter from Charles P. LeCornu, vice-president of the Royal Jersey Agricultural and Horticultural Society, inclosing the following extract of proceedings of that society at its session of May 15, 1875:

The secretary having read to the meeting a letter from Mr. N. Pike, of Winthrop, Kennebec County, State of Maine, United States of America, as well as the Augusta (*Maine*) Farmer of April 17, 1875, in which it is reported that 3,000 cattle are annually sent fron this island to the United States of America; it was proposed by E. Nicolle, Esq., seconded by A. Le Gallois, Esq., and

Resolved unanimously, That a representation be transmitted by the president of this society to the vice-consul for the United States Government in this island, with a request that it be transmitted to the Minister of Agriculture, showing that, whereas, from the statements above mentioned, it would seem that a fraudulent traffic has been carried on by *soi-disant* importers of Jersey cattle, the number said to have been introduced into the United States being considerably in excess of the whole number exported from this island within the period specified; that from the said statements it must be presumed that other than Jersey-bred cattle are introduced into the United States as such—a practice which if not checked would soon prove seriously detrimental to the reputation of an insular stock, producing disappointment to the purchaser, and ultimately tending to stop the legitimate trade which has long existed between American purchasers and breeders in this island.

Further, with a view to check any fraudulent traffic of the sort and to enable such as may desire to obtain the pure stock from this island, it was

Resolved, That the assistance of this society be given to any person or constituted body whose application to it is is officially recommended.

FRA. LABEY, *Hon. Sec'y.*

Sheep Ticks.

A Western flock-master says: "Get one pound of sulphur and put it into four quarts of salt, and give in that proportion to your flock once in two weeks, and it will cure your sheep of not only ticks, but scab. When the ticks and scab are gone, bate the sulphur."

Veterinary.

Hog Cholera.

This disease, according to Prof. Cressey, is undoubtedly a blood disease, belonging to the anthrax type of fevers. The symptoms are thus described by him:

"The disease sets in and usually secures a firm hold upon the animal before its presence is suspected. The one affected will isolate himself from the rest and burrow in the litter, often remaining thus till death, though sometimes they will run about as if wild, grunting and squealing as if in great pain. Dullness, drooping head and ears, and loss of appetite, are the symptoms observed, if at all, in the first stage. In what may be called the second stage, the abdominal pains are indicated by lying on the belly, with fore-feet outstretched, and, when caused to move, uttering shrieks. The skin takes on a purple color, particularly upon the back and ears, along the abdomen, and inside the thighs. The pulse is rapid, but feeble. Diarrhœa sets in, and becomes profuse in the third stage. The ejections are black and offensive. The pulse weakens, and finally becomes imperceptible. Breathing is difficult and spasmodic, owing to congestion of the lungs, and an irritating cough comes on. General weakness is now apparent; the animal can scarcely stand, his legs gets entangled like a tipsy man's, and complete paralysis soon results. Eruptions on the skin may have followed the first discoloration, which now are succeeded by sloughing and ulceration. Insensibility precedes death from three to six hours. The malady sometimes appears in less fatal forms, accompanied by colored skin and loss of appetite for a few days, when recovery follows; but this is uncommon. On post mortem examination, the appearance of rapid decomposition is manifest, and all the tissues transfused with blood.

Treatment.—After diarrhœa sets in death is almost certain. Before that event, administer quickly, (by means of a drenching horn or long-necked bottle, and, if the pig is large, tying him to a post with rope around his upper jaw:)

Epsom salts, 2 to 4 ounces.
Sulphur, 2 to 6 drachms.
Gentian and ginger, powdered, 1 to 2 drachms.
Molasses, 2 to 3 tablespoonfuls.
Gin, one-half pint.

Cold water, sponge baths and friction with a coarse cloth are useful, if they can be borne, and this treatment must be gentle. Clean bedding and comfortable pens, with light diet of vegetable food, are required. A free run in a bare pasture or lane is a great help. In this as in all sicknesses, when possible, prevention is the best treatment, and simply consists in careful feeding, plenty of vegetable food, cleanliness, and exercise.

At the recent N. Y. State fair, Dr. Bush read a paper describing a disease known as "cholera," prevailing in that State. He said:

"The symptoms at the commencement are loss of appetite, drooping of the ears and tail. The hog appears dumpish, generally seeks for water, lies on its belly.

The urine is scanty, high-colored, or bloody and acid, and in some instances there is entire suppression of this excretion. The bowels are sometimes loose; at others constipated. In some cases there is bleeding from the nose, and this seems to mark very severe cases. The hind legs appear weak or lame. The animal uses them with difficulty; reels when he walks. The pulse is very weak and the temperature high; the tongue and mouth dry. As death approaches, the breathing is jerking and rapid, the pulse is quicker and more feeble, and death seems to take place from exhaustion. In only a few instances did the hogs indicate severe suffering.

Treatment has been rather unsatisfactory. In several severe cases recovery has followed treatment where pains have been taken to give medicine promptly. Some got well without anything. The remedies used were calculated to decrease the violence of the circulation, render the blood alkaline, act on the kidneys and other excretories, as well as to sustain the vital forces. Epsom salts, nitrate of potash, digitalis, carbonate of ammonia, Peruvian bark and gin were the remedies used. The first two given to the hogs in their food seemed to act as preventives, as very few cases occurred after they were used.

Prof. Law, of Cornell University, said the disease is an enteric or intestinal fever. He does not believe in treating such fatal infectious diseases among animals of ordinary value, but thinks they should be "stamped out" by killing all attacked by them.

The Texas Cattle Disease.

The disease having appeared in New Hampshire, the Board of Agriculture of that State has deemed it advisable to publish a statement of the facts in the cases which have come to their knowledge, together with such cautionary instructions as the present knowledge of the disease seems to require. The following extract from this document is worthy of attention:

Preventive Measures.—As preventive measures, people must buy beef only of reliable men, who will not buy or sell diseased meat. Butchers should not slaughter Texas cattle, except at a long period after their arrival, nor should they slaughter any beeves that have been exposed to the disease. Cattle dealers should be punished for bringing diseased animals to market, and especially for purchasing condemned animals. Local officers should exercise their authority to prevent suspicious cattle from being brought into their towns, and railroad officers should allow only healthy cattle to be shipped or transported on their lines.

Carbolic acid diluted, or heavy coal tar, should be daily sprinkled upon the droppings of affected animals, upon the floors of barns where they have been, and on yards where they have been herded. The excrements of sick animals are the chief source of communicating the disease. Let none of it come in contact with other animals, nor be washed away in any running water. Take care and not convey the disease on the feet from the yard of sick cattle. Do not sell the hides of dead animals to the tanner, but bury them, with the carcasses, deep,—putting lime upon them.

Remedies.—No definite course of treatment has been prescribed. Some will recover without medicine or surgery, but a large majority of native cattle will die if attacked. Bleeding has been recommended, followed by a heavy dose of salts. Carbolic acid in the drink is recommended. Let animals drink all they will, and have salt to their liking. Aconite was given in several cases at Manchester, and the animals recovered. If there is no skilful veterinarian at hand, call the family physician. If he is a sensible man he will attend to the call. Don't employ a quack, for you can do better to follow your own judgment.

Whenever any serious disease appears in any locality in the State, it is desirable that notice be given to the board. There are two physicians on the board who will give attention to cases reported, and veterinary surgeons will be consulted whenever it is practicable to do so.

There has been an unusual amount of disease among neat stock in this State the present season, and it is important that investigation be made and the means of arresting it applied. In behalf of the board,

MOSES HUMPHREY, *Chairman.*

Ringbone.

The *Turf, Field and Farm* says firing and blistering are the general agents employed by most veterinarians in the cure of spavins and ringbones. But I believe that when the bony growth is extensive, and unless you can arrest and stop the leakage of the synovial fluid, neither firing, blistering nor counter-irritants will give any good results, and the friction will go on in the joint until the joint is destroyed through anchylosis. The following blister will have a tendency to produce absorption, independently of its counter-irritative powers: Take biniodide of mercury, one drachm; lard, one ounce; mix. After cutting the short hair over the exostosis, rub a little of the ointment into the skin covering the ringbone every night until a full watery discharge is produced from the surface. To facilitate this, the parts should be fomented with a very strong ley, made by dissolving four ounces of sal-soda in one gallon of boiling water, and apply by means of a sponge, as hot as the hand will bear, every morning and evening. This fomentation should be continued for several days after the ointment has been discontinued. The patient will not bite the parts after this application. Repeated dressings will be necessary, and the joint must have at least two months' absolute rest, and the patient placed in a roomy, loose box-stall. This remedy is sometimes successful, but it will totally fail where the exostosis is extensive, or there are caries, or even severe and active inflammation of the synovial membrane.

Loss of Cud.

Dadd's prescription for this, which is synonymous with loss of appetite and is only a species of indigestion, and may be brought on by the animals eating greedily of some food to which it has been unaccustomed, is: Golden Seal, powdered, 1 oz.; powdered caraway and poplar bark, each two ounces; cream of tartar, ½ ounce; mix and divide into six powders, giving one every four hours in a sufficient quantity of camomile tea.

The Dairy.

Deep-Setting Milk.

Mr. L. S. Hardin, of Louisville, Ky., a well-known dairyman and breeder of Jerseys, makes a very interesting report to the *Country Gentleman* of a visit paid to Chautauqua Co., N. Y., whither he went by invitation to make test trials of setting milk deep and shallow. We extract the following from his letter:

Upon my arrival in Chautauqua, I found no means for setting milk after my own peculiar fashion; but, by means of a little ingenuity, we improvised the materials for setting the milk deep in water, after the Swedish fashion. We procured three cans twenty inches deep and about eight inches in diameter. Mr. Martin Bailey, of Stockton, was selected to conduct the shallow side of the experiment, with Mr. O. C. Blodgett, an experieneed butter-maker, to assist him.

Mr. Bailey is a man who has bought his farm with his cows, and last year made over 260 pounds of butter to the cow. He has always been an earnest advocate of shallow setting. We took the night's milk from his herd of 15 cows, (about 185 pounds of milk) mixed it thoroughly, put 100 pounds in three of my deep cans; Mr. Bailey putting his share of milk in one of his large shallow pans, (Mr. Bliss' favorite.) I put my three cans in a barrel, filling with water nearly to the tops of my cans, and then put in ice. I left my cans in care of Mr. Bailey, and, in order not to let me get into his temperature, he kept the water that surrounded the cans at a temperature ranging between 38° and 45°, mostly 38°. By accident two of my cans got considerable water in them. I skimmed the cans at 48 hours, and churned the cream when it was barely sour.

Mr. Bailey made a pound of butter from 21.53 pounds of milk with his shallow pan. I made a pound of butter from 21.51 pounds of milk with my deep cans. It will be seen the deep cans were a small victory, even among the shallow-setting hills of Chautauqua. I could not stay long enough to make another experiment, but Mr. Bailey has promised to repeat the experiment. This time he promises to be particular and keep the water out of my cans. He will let the milk stand 72 hours, as it appears to take longer for the cream to rise in the milk of native cows than of Jerseys. He will also add sour milk to the cream to more thoroughly ripen it. I have hopes of even better results. It will be remembered Mr. Reeder and I were handling the milk of Jerseys when we took but a fraction over 19 and 17 pounds respectively to make a pound of butter. The above experiment was with 185 pounds of mixed milk, from 15 native cows, taken from them the evening of a very hot day.

No wonder they are shallow setters in Chautauqua county, 850 feet above Lake Erie, with an atmosphere so dry and pure they can make delicious butter under the shade of a tree; in fact it is hard to spoil milk in such an atmosphere. I was informed there are over 50,000 cows in the county. The milk of between 4,000 and 5,000 of them is used in making cheese at about a dozen factories. The milk of most of the others is used in making butter in the innumerable private butter dairies that meet you at every turn. The butter is universally packed in tubs and firkins, and sold either in or for the New York market, at about 30 cents per pound.

The President of the Western N. Y. Dairymen's Association appointed me chairman of a committee to visit all the dairymen in the county who made an average of 300 pounds and over of butter to the cow per annum, and learn as nearly as we could how they did it. This was a rare treat to me, and the dairymen seemed to enjoy telling of their success (men generally do.) We found but two who had reached 300 pounds per cow, but we visited and took notes from six who made over 260 pounds per cow. We put them through a severe course of questioning. The result will appear in a more elaborate report.

My conclusions were: they had succeeded by hard work coupled with good judgment in selecting none but the best of cows, feeding them (while on luxuriant grass or wonderfully early-cut pea-green hay) with from four to six quarts of ground feed a day, and all the skimmed milk and buttermilk fed back to the cows, which is the general practice in Chautauqua. I could not learn of a single cow that had been injured by it. On the contrary, those who practice it hold that it returns to the cow just what has been taken from her; all she misses is the cream, and the addition of meal more than repays her for the loss.

I paid particular attention to the escutcheon in the herds of large milkers; some of them giving 59 pounds of milk a day. About one-third of them had escutcheons running well up and about four inches wide. The remaining two-thirds made a poor show in this line; not one had the mirror well out on the thighs, as can be seen even upon the bulls of my Jerseys. The best escutcheons I saw were not on the best cows, according to the judgment of the owners, who knew nothing about this wonderful mirror that reflects so little.

Milk as an Exhauster of Soils.

The *Journal of Chemistry* remarks that few farmers seem to realize that constantly feeding milch cows on a farm will impoverish the soil, although almost any intelligent man will admit at once that if he raises twenty-five bushels of wheat to the acre, he must return some fertilizer to the soil which will replace the elements the wheat has removed. The ash of the grain of wheat is composed of the following ingredients in the proportions named:

	In 100 parts.
Potash	31.1
Soda	3.5
Magnesia	12.2
Lime	3.1
Phosphoric Acid	46.2
Sulphuric Acid	2.4
Silica	1.7
Total	100.0

As the ash is about 2.07 per cent. of the weight of wheat, 25 bushels, weighing 1,500 pounds, will contain 31.05 pounds of ash.

According to a recent report of the Connecticut State Board of Agriculture, the average amount of milk yielded per cow by a number of dairies was 2,500 quarts. This is equal to 5312.5 pounds, at 2½ pounds to the quart. Now, good milk yields on an average 65 per cent. of ash; or the 2,500 quarts will give 34.53 pounds of ash, of the following composition:

	In 100 parts.
Potassic Chloride	14.18
Sodic Chloride	4.74
Soda	6.96
Potash	23.46
Phosphoric Acid	28.40
Lime	17.34
Magnesia	2.20
Sulphuric Acid	trace.
Silica	trace.

Thus we see that the ash from 2,500 quarts of milk is about the same in amount as from the acre of wheat, and that it does not differ greatly in composition.

Nitrogen is another element that the wheat and cow both remove from the land. Wheat contains 13 per cent. of albuminoids, which will yield 2 per cent. of nitrogen. The 25 bushels will therefore remove 30 pounds of nitrogen. Milk contains on an average 4 per cent. of nitrogenized bodies, which will yield 614 per cent. of nitrogen; or the 2,500 quarts will give 32.42 pounds of nitrogen. It is not quite so easy to make the comparison of the amount of carbon removed; nor does it make so much difference, as the carbon is derived mainly from the atmosphere, in the one case by the wheat plant directly, in the other by the grass which is eaten by the cow.

From the above it is easy to see why old pastures run down; and the remedy is exactly the same as should be used if wheat had exhausted the soil; that is, the ground must be manured. And the composition of the ash of the milk shows why potash salts and super-phosphates produce such remarkable effects on old, worn-out pastures. These furnish exactly the elements that have become exhausted. Farmers who buy grain largely for feeding, and apply the manure produced to the land, are thus almost unconsciously returning to the land that which they have removed in the form of milk.

Vegetable Garden.

Clear off the stalks of Asparagus, if it has not already been done and give the beds a good dressing of manure. Air Cabbage in frames, and around the stalks of those planted in the open air draw a little earth. Cauliflowers not headed out may be heeled in in a hot-bed. Earth up Celery only when dry. Plant Lettuce for frames now, taking care to air whenever the weather will permit. Harvest and store away all root crops, except parsnips, which may remain in the ground. Spinach should be thinned out and kept clean of weeds. Clean off the remains of old crops and plow up all unoccupied space.

Agricultural Calendar.

Work for the Month—November.

The season of Thanksgiving and Harvest home brings, we trust, to all the friends of the *American Farmer* ample cause of gratitude for generous harvests, that the seeding of the fall crops is completed and those already matured are secured against damage by weather, or misappropriation by man or beast. Preparation for winter and the anticipation of the work of the spring is then in order.

The Corn Crop ought not to be left in the field longer than can be avoided. It is subject to too many casualties there, and as soon as it can be put under shelter without danger of heating the better it will be. It can then be husked out at leisure.

Potatoes.—These ought to be dug without delay, if it has not already been done.

Ruta Bagas and Sugar Beets should be harvested before injury by frost. The first named will stand more frost than mangels or beets, or even flat turnips. *Parsnips* for spring use are best left in the ground. For all other roots the best plan is to keep them in cellars, pits or trenches, though many put them up in conical heaps and cover with straw and then with earth, making an opening at the top for escape of heat and moisture. This opening is closed as the weather becomes colder. *Beets* and *Carrots* are preserved in good condition in boxes or barrels with sand mixed with them.

Plowing.—Time and labor in spring may be saved by plowing now. Stiff soils especially are benefited by the influences of the freezings and thawings of winter.

Drains.—See in the grain fields that water furrows are properly made and kept clean, that liability to winter killing may be avoided.

Live Stock.—*Fattening Hogs* ought to be put up early, and as soon as they have become used to the change be pushed forward as rapidly as possible. Give them frequent messes of soft food or bran mashes. Provide ashes and charcoal or rotten wood, that they take as much as they choose, and occasionally give a little salt. These substances promote correct action of the stomach and bowels. Give them a warm and dry sleeping place, and put muck, leaves or other absorbing materials in their pens. *Milch Cows* ought to have extra care and feed as the weather becomes colder. Give regular doses of salt, and every night and morning a mess of meal and middlings. Roots may be fed, in moderate quantities, to advantage. Cows ought not to be exposed to pitiless storms of cold rain or snow. If warm dry stables are not provided, then certainly good sheds, closed to the North and West, ought to be. *Young Cattle* and *Calves* ought also to have shelter during inclement weather and at night; and be brought in early from the pastures and have a good mess of meal and bran with stalks or hay. *Horses* should be

cleaned daily, their stalls well littered, and fed and watered with regularity. See that their stables are protected from chilling drafts, but do not have them too close for proper ventilation.

Fire Wood.—Do not let the season of bad roads find your supplies of this essential article lacking.

Fencing and **Gates** should be looked after and needful repairs made.

Farm Implements, &c.—Have these all put away for the winter. Any that need to be mended ought to be attended to. Grease your gears, and give tools a coating of crude petroleum on both the wood and metal. The wood may afterwards be painted.

Materials for Manure-Making. Take extra pains at this season to having an abundance of litter in your pig-pens, cattle yards and sheep sheds. Also to the gathering up of the dead leaves, road scraping, turf parings, &c., which if left to lie are eye-sores during the winter. Economise the waste from the dwelling, especially the ashes, and the chamber slops.

Look at the drainage of the manure pile, and do not allow the best part to be leached out by every rain that falls upon it. Let the slope be towards the pile, and incorporate with the manure all the materials we have named and such others as have fertilizing qualities.

Planting Fruit Trees.—Now is the time for this, if preparations have been made. Be careful in securing your trees, and especially in eschewing travelling pedlers.

The Poultry Yard.

Poultry for Farmers.

Mr. W. A. Burpee writes as follows in the *American Fancier's Gazette:* "It has generally been believed by farmers, and the belief is still prevalent, that it is ridiculous to expect to make poultry pay such enormous profits as are claimed for it; they laugh at the idea of 200 per cent. profit, yet even more than that can be obtained by poultry breeding. It would, no doubt, be preposterous to say so, unless proof indorsed the statement, but facts substantiate it, and some of the largest and best breeders of this country, show, year after year, that these present results can be obtained. What would some of our farmers say if they were told that poultry pays as much as 500 per cent? The French have reached to a greater knowledge of successful poultry-raising than any other nation, and they claim this immense profit, and there is not the slightest doubt but that their large profit is no exaggerated statement, but a reality. In this country it is known that poultry can be made to pay at least 200 per cent. and we dare say that even larger results may be obtained. Now, farmers, what do you say to this? Is there not some inducement to pay greater attention to this hitherto comparatively neglected branch of rural industry? We are confident that you can realize more profits from poultry-raising, provided you attend to them properly, than from anything else on your farm. Be wise, and begin this fall by ridding yourself of your mongrels, and commence with some really good birds."

Fattening Fowls.

Here is the plan recommended by a correspondent of the *Rural New Yorker:*

Shut up your fowls to fatten, says one authority,—a thing I never would do if I desired their flesh for my own table. Moderate exercise is as necessary to produce healthy meat in fowls as it is in larger animals, and those who want diseased meat of any kind are welcome to their preference, but should not attempt to force it upon others. Fowls which are permitted to have a good, wide range in pursuit of a variety of food are as much superior for the table as the fat Texas steer is superior to the swill-fed cow for beef. Another writer says fowls should not be permitted to help themselves to food, else they will not hunt for insects when allowed to run at large. But this has been, and still is, my system of feeding, and from long experience I am convinced that it is the most economical and best plan by all odds. My fowls, when they come from the roost in the morning, will take a light breakfast of corn, oats, wheat, or whatever grain is given them, and then start for the fields, hunting for worms and insects gererally. I have never as yet discovered that permitting hens to help themselves to grain had any effect upon their wandering habits or made them disinclined to eat insects or make a raid upon ripe tomatoes or other fruits and vegetables. Then, again, throwing out grain at stated periods to a number of fowls tends to increase the somewhat natural disposition of the strongest to overpower and drive away the weaker, and a portion will gorge themselves to excess while others obtain little or none. To keep fowls healthy, good-natured, and fat, food in abundance should be placed where they can obtain it at any time desired, never omitting a supply of fresh water near by. In winter, meat and vegetables may be added to the usual supply of grain with benefit to the health of the fowls, as well as tending to increase the quantity of eggs. It is always best to supply a variety of grain, such as wheat, millet, corn, and buckwheat, and allow the fowls to take their choice, which they will frequently do in a manner not laid down in the poultry books. Disease among fowls is the result of mismanagement and nothing else, no matter how much science may be mixed in as preventives or cures. Cleanliness is of the first importance; next, an abundance of good food, always accessible and in variety; also, fresh, clear water, summer and winter, where the fowls can get it when desired. In summer, with a wide range over grass and cultivated ground and the above requisites, no hardy, healthy breed should ever become diseased, and I doubt if they ever would.

Cattle Disease in England.

The Farmer newspaper, in the course of an article on the cattle disease, says the number of cases for the quarter ending the 16th of October was as follows: In Somersetshire, 83,000; in Cheshire, 50,000; in Dorsetshire, 48,000; in Gloucestershire, 44,000; in Oxfordshire, 39,000; in Warwickshire, 33,000; in Norfolk, 31,000; in Cumberland, 23,000. Throughout England and Wales there were for the same time over 500,000 cases. The money damage is estimated at a million dollars.

Horticulture.

Clay Soils for the Apple and Pear.

Messrs. Editors American Farmer:

Clay is a compact, stiff, vicid and ductile earth; when moist it is easily dissolved, and when mixed with water does not readily subside.

For promoting the vegetation of many plants, clay is a necessary ingredient to the soil, with the exception of that used in manufacturing porcelain and other white fermenting clays, for which no use has hitherto been discovered in agriculture. By its cohesion clay retains humidity, on which, perhaps, much of its fertilizing property depends.

All clays in a natural state contain too much water, are apt to chill the plants in wet or moist seasons, and, on the contrary, in dry weather they become hard and impervious and obstruct vegetation. Clayey lands in their natural state are apt to be very barren, unless when a summer is so divided between rain and sunshine, that they are kept on a medium continually betwixt drought and wetness which seldom or never happens in our climate.

As evidence of the value of clay in promoting the growth, fruitage and health of the apple and pear tree, we propose noting the benefits received by individual trees of the species just named.

About forty years ago the writer's father had occasion to dig out a spring-house. The excavation was in the side of a clayey hill of moderate prominence; depth about ten feet, from which a drain was cut through the clay, and on to where a hydrant was erected for getting the water. At the approach of the next winter, or the following, a few barrels of Limbertwig apples were put in this house to prevent freezing, but, as was expected, the dampness was too much for the preservation of the fruit. They rotted very soon and were thrown out and scattered around the locality. From the seeds there grew up several trees, which have always been thrifty, generally bearing every year more or less, and often very heavy crops, and without any sort of culture or manure. What is notable about these trees the present year, especially one of them, is that it is heavily laden with fine-keeping winter apples, resembling the Limbertwig, and equally valuable, when all the other trees on the farm have meager crops or none at all. We do not think from what we have just stated that it would be "jumping to the conclusion" that clay was the most important agent in producing this fine, hardy tree and its fruit. No doubt this extra-growth and vigor was caused by the clay and the depth to which it was moved and mixed with the surface soil, and the consequent free traveling of the roots in every direction; the earth having been thrown around in bulk to a considerable distance, and the stone walls having long since tumbled in.

As a still further proof of the adaptability of clay soils to both the apple and the pear, we recollect a large pear tree, seedling no doubt, which grew and flourished for about half a century in clay soil, two or three rods from these apple trees. The trunk of this wide-spreading pear tree was some eighteen inches in diameter, and the fruit was abundant, but small, yet delicious.

We do not wish to be understood as advocating that stiff clay soils are the very best for the cultivation of all varieties of the apple and pear, but as our opinion that clayey soils deeply moved and rendered permeable and loose are superior, and promotive of hardiness, keeping quality and profuse bearing. J. Fitz.

Keswick Depot, Albemarle Co., Va.

Potomac Fruit-Growers' Association.

October Meeting.

To the Editors of the American Farmer:

Among the specimen fruits on exhibition were:

Of Pears—Gen. Taylor, Petre, W. Nelis, Barrone de Mello, Doyonne Dillen, B. Easter, B. Berckmans, B. Brettoneau, B. Langelier, B. Hardy, B. d'Anjou, B. Oswego, Bergamott Cadette, Gen. Lamoriciere, De Lamartine, Chancellor, Doyenne d'Hiver d'Alencon, Hovey, Henry IV., Coosa, Lawrence, Doyenne Goubault, Figue d'Alencon, Buffum, D. d'Angouleme, Stoddard, Louise Bonne de Jersey, Vicar of Winkfield, Saint Germain.

Of Apples—Winter Bellefleur, Smith's Cider, Winter Paradise, Spice, Cabbage Head, York Imperial.

Of Grapes—Catawba, Clinton, Concord, Alvey, Gœthe, Delaware, Diana, Ives' Seedling, Norton's Virginia, and ripe specimens of Ives of the second growth.

Of Peaches—Heath Cling.

Of Flowers—Dahlias in large variety and very perfect bloom. Cockscombs of prodigious size.

Of Japan Vegetables—Eto-uoo-re, or stringed melon; *Tomasz*, or green squash; *Ciso*, or salad plant.

The report from the "Chicago Inter-State Exhibition" showed that of the twelve medals offered by President Wilder the Potomac region received three; that while Ellwanger and Barry had 260 varieties pears, and President Wilder had 270 varieties, the palm was awarded to two gentlemen of our society for Bartletts and Seckels. One of these medals was to a member of our society who exhibited 110 varieties of apples grown in this region.

The President read a paper on

THE ADAPTATION OF SOIL AND CLIMATE.

Everything has its specific character and habits, its favorite home, its chosen locality and soil. Here only it comes to perfection. The Newton Pippin is an example in point. It originated on Long Island, in a soil not congenial to its full development. After some years scions were sent from the original tree to different parts of the country. The trees of this variety have well-nigh disappeared from the original locality. The largest amount of this fruit raised north of Maryland is on the Highlands of the Hudson. The next largest is on the highlands in Albemarle, Virginia. Here the fruit has become rejuvenated, and is one of the finest apples known, and is called the Albemarle Pippin. On my way to Richmond last March, at every station, people offered "nice Albemarle Pippins" for sale and they were in perfection. G. F. Needham.

Persimmons---Olives---Peppers.

An obliging South Carolina correspondent gives us the following interesting notes under date of October 3d:

"I am now enjoying some persimmons which are large and luscious. I think it well worth the little care it requires, which is mainly to let it grow and bear its fruit. There are, of course, many varieties of them, some ripening in August with me, whilst others require a frost to ripen them. I have under notice two varieties: the one large and luscious, ripening ordinarily in August and bearing well; the other, smaller, the tree bearing about as many fruits as leaves, and ripening just after frost. I am now pickling olives, which can be as well prepared in this country as in Europe.

It has been so very dry nothing could succeed with us. I fear there will be no strawberry crop from Charleston next spring, as the drought has not only prevented the setting out of fresh plants but has even cut short the supply of plants. I am afraid our turnip and cabbage crops will also prove failures. I have just been able to sow my crop of turnips; cabbage plants I have, but it is too dry to transplant them.

Do you know the *true* Cayenne pepper? I have kept my seed pure for about 40 years, and for shell fish and in Okra soup—the soup of soups—I find it indispensable, though I cannot relish the great heat, whenever liberally applied."

Wine-Growing in Virginia.

A correspondent of the *Charlottesville Chronicle*, Mr. Louis Ott, says the manufacture of wine is an art which requires great skill and experience, particularly when the business is a new one, and he advises that all grapes be sold to a wine manufactory at lower rates, rather than the heavy expense should be incurred of making wine and the risk run of losing from want of skill the whole crop.

He says grape-growers in Virginia complain of the want of a sure market for wine, but that this ought to be considered before the vineyard is planted, as the kind of wine made, and consequently the variety of grapes planted, depend on the demands of the particular market desired to be supplied. The larger number of grape-growers in Virginia are Germans, who persistently aim to make their wines like those of Germany. In this he thinks they are certainly on the wrong track, as German wines seldom suit the tastes of any other people than the Germans; and we never expect to export wine to Germany, nor yet to supply the German market in the United States, from the impossibility of competing with the cheap wines imported from Germany. Our efforts, the writer thinks, ought first to be directed towards building up a home market by manufacturing a wine which will satisfy the taste of American consumers, and this can be done without the use of sugar, or otherwise adulterating the juice of the grape.

The best market for wine, he says, is England, where a very large quantity is consumed and none produced. The market in England has not been sufficiently supplied for many years with those kinds of wines which are most relished by Englishmen, owing to the grape disease which has ruined the vineyards of Spain, Portugal, and a considerable portion of southern France, whence the English market has been supplied for centuries.

The northern part of the United States cannot furnish a wine with body enough to satisfy the English taste, but we may be able to do that some day in Virginia, with our warm and dry climate, and with our varieties of grapes, natives of the South, which do not mature in the Northern States. To export wine to England should be our problem and the height of our ambition.

The New Early Peaches.

AMSDEN.—John Wampler, of Carthage, Mo., who is interested, we believe, in the propagation of the fruit, writes of this kind to the *Gardeners' Monthly*, that the few specimens left by hail storms this year ripened about three weeks before healthy Hale's Early. The largest specimen measured 7⅞ inches in circumference.

EARLY BEATRICE.—Randolph Peters, of Wilmington, Del., says this kind has fruited in all cases about two weeks earlier than Hale's Early; has been perfectly free from rot, and is a good shipping peach. J. J. Blackwell, Titusville, N. J., writes to the same journal that the prize peach of this kind ripened with him July 25th, the last July 30, while Hale's Early was hard and green August 3. Wm. Parry, Cinaminson, N. J., says he picked his fruit of this kind July 23d, and they were very handsome and excellent, measuring 1¾ to 1⅞ inches in diameter.

ALEXANDER.—Charles Downing, Newburg, N. Y., says he had half a dozen specimens ripening about two weeks before Hale's Early. N. J. T. Smith, East New Market, Md., says it ripened with him July 8th and 9th, and was the finest early peach he has seen. S. E. Thompson, Vienna, Md., had it ripen three weeks before Hale's, and ten to fourteen days before Early Beatrice.

A Weeping Dogwood.

Mr. Meehan, in the *Gardener's Monthly*, thus refers to this unique tree, which was discovered by our friend Dr. W. S. Thompson, of Baltimore county, in one of his rides:

"We have seen a plant of the Weeping Dogwood (Cornus Florida) referred to by one of our advertisers, and can say that it is one of the most charming things we ever beheld. The branchlets are completely pendulous, and yet the leader manages to go straight up, so that it can be made very handsome as a specimen, even when worked low. In flower and fruit it must be a striking object,—and then its dark leaves in fall would be as beautiful as the purple Beech in spring. It is unusual for a discoverer to offer the plant in this way. We suppose some amateur lover of rare trees will secure it; but perhaps good offers will come from some in the trade, who will be proud to be among the first to introduce so good a thing."

THE WASHINGTON LILY.

This *Lilium Washingtonianum*, says Vick, is one of the best of the California and Oregon lilies; pure waxy white, glossy as though freshly varnished, and spotted with fine purple spots. The flowers, though perfectly white when they open, change to pink, becoming darker each day, so that flowers are seen on the same plant of every shade from white to deep purplish pink. We have now this Lily in flower, growing from four to five feet in height, and bearing over twenty flowers each. Flowers two inches in length and same in breadth. The engravings show a flower just opened and also the habit of the plant. The bulbs should be set six inches deep in the ground. The foliage of this Lily is a little delicate, but it is becoming acclimated. It is not yet very abundant, but Vick sends them by mail at one dollar a piece.

Another of the California varieties is the *Bloomerianum* or *Humboldtii*, a pretty yellowish lily, with large brown shoots, found growing, according to the same authority, in shady places and near the banks of running streams.

Still another is the *Pardalinum*, a very good small lily, growing in large clusters, the lower half of each petal yellow, spotted with brown; the upper half red, almost crimson, giving the flower a very pretty appearance. The foliage is lanceolate, that is, very narrow lance, shaped leaves, and the plants and bulbs and even the leaves are entirely healthy. The California lilies are not thoroughly tested, but Mr. Vick recommends deep planting as one requisite of success in their culture. This indeed ought to be practiced with all lilies.

The Cyclamen.

This pretty flower is too little known. It is a native of Europe and Asia, some varieties being very abundant in Switzerland and Italy. It is of the easiest culture. Pot the bulbs in October or November, in rich loam, mixing about a spoonful of soot with the same, to give brilliancy and size to the flowers. Bits of charcoal, broken fine, will serve the same purpose. Use a small pot, and place the crown of the bulb just above the surface. Keep the plants cool till the leaves are well grown. When the flower buds begin to rise on the foot-stalks, remove to a sunny shelf and where they will begin to show bloom. Place as near the glass as possible. After the blooming season (which generally lasts two or three months) is over, gradually withhold water and let the leaves die down. To keep the bulbs through the summer, bury them in the open border, taking them up in September. It is particularly adapted for window culture, and Vick, who gives the above in his *Floral Guide*, says will give more flowers with less trouble than any plant he is acquainted with. There are several varieties,—some white, others crimson, spotted, &c.; and some are fragant.

Sedum Sieboldii.

The London *Garden* calls attention to the beauty of Siebold's Stonecrop, when grown as a vase plant. The peculiar stony hue of the leaves and delicate rose of the blossoms which appear in autumn, makes it seem most happily placed when filling a small classic vase in an isolated position. In cold soils it often makes a very stunted growth; but, planted as above described, it grows to the height of a foot or more. For small baskets in the greenhouse it is also worth attention.

"Gary's Hold On" Peach.

A plate of this fruit of Mr. J. W. Kerr, of Denton, Md, attracted much attention at the Maryland Horticultural Exhibition. It is a very large and handsome peach, yellow flesh and skin. The color around the seed may be some objection with the packers, but its time of ripening will make it a great acquisition as a market variety.

An Improved Walnut.

"Steele's Improved Black" is the name of a Maryland seedling, discovered by J. B. Steele, of Caroline county. It is a large nut, broader than long, with a very thin shell and a remarkably white kernel. The original is said to be evidently a graft, as the tree is forked, and the one side bears an inferior nut, while the other produces this one.

What its Friends say of the Farmer.

This, *we* think, is a good time of the year to reproduce some of the kind words which are sometimes addressed us, which we publish as showing the estimation in which the "Old Pioneer" is held by its readers:

One in Wilcox Co., Ga., says, in remitting his subscription: "I don't know exactly how much I owe. I cannot afford to have the *Farmer* stop coming to my house. Continue its visits and let me know what I am due."

One in Granville Co., N. C., writes: "I am so well pleased with the *Farmer* that I should very much regret its discontinuance in case circumstances made it necessary. The careful perusal of one number will very often repay for a whole year's subscription."

Another in Amherst Co., Va., says: "I take great pleasure in reading the *Farmer*, and shall try to double our club the next year."

Another in Frederick Co., Md., sending twenty-seven subscribers, writes: "I hope during the fall, when farmers have more time to read, to make up and forward you another club for your *model* journal."

As an advertising medium to reach intelligent farmers, the followind will testify to its value:

Mr. Thos. J. Lea, Montgomery Co., Md., writes: "Please keep my card OUT of the *Farmer* till further notice. It has done more for me than I expected. I am obliged to refuse, for want of stock to fill orders." And the same gentleman, a month later, writes: "We bought Dr. Drevais' cattle from seeing them advertised in the *Farmer*"

A gentleman in Eastern Virginia—whose opinion we highly value—says: "Your journal, without compliment intended, is the most useful, practical and cheapest agricultural publication in the Middle and Southern States."

A friend in Cleaveland county, N. C., says:—"I wrote you not long since that I would try to to send you a club. I now send you five names, with the money, and hope to increase the number during the fall [He has already done this.—*Ed.*] I formerly lived in Edgecombe Co., where your paper used to, and may now, have a large circulation, and did a great deal towards building up the agricultural interasts of that section.—This section is badly behindhand, as it has been much isolated previous to the A. L. R. R. passing through. Since that time it has been improving and I think with a good agricultural journal (and yours fills the bill) it is destined to become a splendid country. We have iron, gold and other minerals, and I know by deep plowing and liberal manuring fine crops can be grown of grain, cotton, clover or anything else in general use."

Holding its Own.

At the last annual strawberry show of the Massachusetts Horticultural Society, the first prize for the finest basket of any variety was awarded to Hovey's Seedling, a berry named by C. M. Hovey in 1833, and which in thirty-five years has been twenty-five times awarded the first prize. In this locality, we believe the berry has entirely disappeared.

Shall I Buy Sheep?

In the Manual of Sheep Husbannry of the Georgia Department of Agriculture, noticed elsewhere in this issue, the commissioner proceeds to discuss the question "Shall I Buy Sheep?" and shows that it is the small farmer that is most deeply interested in this question. The wealthy farmer who goes into the business as a regular branch of industry will be likely to keep on hand 400 or 500 sheep, and can afford to keep a shepherd to watch and protect his flock; but the small farmer, who would keep only from 50 to 100 head, cannot thus safely invest his money unless his farm is so arranged that his flock can be kept near his house and securely penned at night. Therefore, it is this class which constitute the largest number of farmers in Georgia and most other States, that are most deeply interested in demanding the protection of the law makers, from the evil to which they are subjected from the depredations of dogs. The young men of the country should take hold of this question and command their rights in the premises.

The climate of Georgia (as well as most of the other Southern States) corresponds with that of the best wool-growing regions of the world. Spain is warmer on its Southern coast than Southern Georgia, and was famous for the production of its Merinoes; and Australia, now one of the principal wool-growing regions of the world, embraces the latitude of Georgia, but a maximum temperature in December—their midsummer month—of 112° Fahrenheit; and Mr. Randall, in "Sheep Husbandry in the South," shows the extraordinary progress which has been made in wool-growing there since its first introduction. In 1810, the first export of wool from Australia and Van Dieman's Land was 167 pounds; in 1833 it had reached 3,516,869 pounds. In 1843 it amounted to 16¼ millions pounds, and in 1871, the crop of Australia, Tasmania and New Zealand was 168,785,773 pounds. "There is no reason (says the commissioner) why, with proper protection, Georgia may not show a proportionate increase in the next decade."

The difference in the cost of keeping sheep in cold and warm climates is alluded to, favorably to the latter, and cases are given in Southwest Georgia where snow never falls and the ground seldom freezes, and where the original pine forest is carpeted with nature's grass, a flock, 3,500 in number, in that region is noted, which cost the owner annually 14 cents per head, clip three pounds of unwashed wool, which sells at 30 cents per pound, giving a clear profit of 90 per cent. on the money and labor invested in sheep; and lands suited to sheep-raising can be purchased in this section of the State for from $1.50 to $10 per acre, according to location. The owner—Mr. Ayres—does not feed his sheep at any time during the year, neither has he introduced the improved breeds, using only what is known as the native sheep.

Similar cases to this have been reported in the pages of the *American Farmer*, as existing in Virginia, where the sheep are left to forage for themselves the whole winter.

Gunpowder Agricultural Club.

Messrs. Editors American Farmer:

The Gunpowder Agricultural Club held its last meeting at the residence of A. C. Scott. Joshua M. Gorsuch was chosen foreman. In the minutes of the previous meeting held at Mr. Scott's, mention was made of an experiment with Whitelock's "Vegetator" on corn, instituted by S. M. Price, the result of which had not been as yet reported. Mr. P. thought it due the club to state that he had in the experiment used 380 lbs. of the "Vegetator" broadcast and 320 lbs. adulterated with rich earth on the hill; yield of corn 15½ barrels. On an adjoining plat, treated neither to fertilizers nor manures, the yield was 8 barrels; by computation the net gain was $8.

The usual farm examination was gone through, and after supper and the ordinary business routine, the subject appointed for the occasion was taken up, viz: Have the members during the year past gained any new or additional experience in increasing the quantity or efficiency of yard and stable manure, or learned anything new in their application?

Joshua M. Gorsuch thinks one ought to be more careful in saving manures. A great deal goes to waste by being exposed to the sun and by not being covered with earth. There is so much to do about the farm that when one wishes to get at this job he is prevented by what seems to be more urgent work. He thought that if those who buy so much fertilizer would pay increased attention to collecting and saving manure, they would be better off in the end.

A. C. Scott—He is more than ever convinced of the good policy of putting everything through the stable. That which goes through the stable possesses double the value of corn-stalks rotted in the yard. D. Gorsuch asked whether the quality of the manure is not improved by having the stalks cut up; that is, does it not improve their capability to absorb? Mr. Scott said his stables are always dryer from stalks than from straw. He applies the manure when he has time and when he's got it. Manure applied last year after cutting off corn has produced better results than that applied in the spring. He never has cow manure in a proper condition to apply direct from the stable, otherwise he would apply it in this way; he ploughs down for corn. He never houses horse stable manure; applies it from the stable, not stopping for freezing weather or snow. In a thaw, even on hill-sides, he has noticed that the coloring does not run far. Applied on snow, manure appears to do as much good as applied when the ground is bare. [Note: The policy of applying on snow was questioned as causing a loss of ammonia, though D. Gorsuch thought it would be retained by the snow.] Mr. Hardisty said that the plan had been formerly pursued on the Oregon farm, but as it led to the deterioration of the sod it had been abandoned. Manure is no longer applied there in winter. Continuing, Mr. Scott said that, unless the crust is hard, stable manure soon melts the snow and sinks through.

Ed. Scott—Did not know that he had learned anything last year in reference to this subject. The pile we all know is increased by feeding more on the place. He had raised his best crop by plowing under. He is more than ever convinced that fine, well-rotted manure, such as lies over in summer, does best plowed in,—say 6 inches. *Query*—Is that good policy on a porous subsoil? *Answer*—He does not know; his subsoil is clay. (*Suggestions by a member*)—If a land had been top-dressed there would be a satisfactory opportunity of deciding whether top-dressing or plowing under is best. Mr. S. replied he had noticed that his neighbor's wheat and grass do better where the manure is plowed under.

Ed. H. Matthews—It is best to apply direct from the stable, whether on snow or not he could not say. They have been in the habit of piling their manure in large heaps of say 50 to 60 wagon-loads, from which they would haul out about 15.

D. Gorsuch has succeeded in making more manure than heretofore, though he knew before that the pile could be increased by taking the time and employing the labor. He has discovered nothing new in the method of application; applies on the surface on plowed ground. *Query*—How do you work in for wheat? *Answer*—Never has any trouble; uses harrows. The Thomas harrow has helped him out to his entire satisfaction where 12 to 15 loads are applied per acre. Sometimes he uses the three-horse cultivator. It is a good plan to put horse-stable manure on high meadow land; cow-stable manure does best in the pile. Sometimes he puts horse-stable manure with cow-stable to keep up heat and accelerate decomposition. He uses for absorbers corn stalks cut up, and earth. Corn stalks will hold considerable liquid.

Mr. Ed. Scott suggested that if Mr. Gorsuch be correct in his advocacy of commercial fertilizers it would be cheaper to use such; composting and piling is expensive. Mr. G. said he had reason to believe that a half-dressing of yard or stable manure with a half-dressing of a good commercial fertilizer rendered both more effective. He had had no experience in regard to keeping up fertility by means of artificial fertilizers alone. This subject is making much stir in the agricultural periodicals.

Hereupon an extract was read from an article by Professor Stockbridge. The Professor asserts that by using "potash and phosphoric acid in some of their compounds and in the requisite amounts of each and all for each crop, superior crops may be produced; first of roots, second of grain, then grass or more properly clover for two years (last crop of latter plowed in) By this process the culture may be protracted indefinitely without it, viz: yard manure."

A second article, (both from the *Scientific Farmer*) urging the importance of retaining the ammonia of the urine of animals by using absorbents, humus, loam and turf, was read. The loss of the urine, it was claimed, depreciates the value of the manure one-half.

S. M Price has been strongly convinced that the most benefit can be derived by application to the sod directly from the stable; with the exception of such winters as last he would not stop for merely frozen ground or snow, unless the ground were frozen hard below. Manures should not lie in the yard all summer. This year he has let some lie in piles. Heretofore the leachings from manure left in the yard would

discolor the water of an adjacent field for a long distance. This year he has used absorbents. He is satisfied that one load direct from the stable will go as far as several thrown into the yard and left over. They are applying all their manure on grass sod and shall continue to do so until they think it an error. After the middle of winter he does not apply on mowing lands unless the manure is sufficiently fine. His object is to keep a field manured ahead for corn. *Query*—Do you think grass gets sufficient benefit from the manure by that plan? *Answer*—That manure is turned up again for oats. He thinks it lasts for a series of crops. He mows three or four years and pastures one. D. Gorsuch said he would like to see Mr. P's plan tested (that is, he (Mr. G.) prefers surface application on plowed ground, with a view to benefitting grass.) Mr. P. thought he would see in a few years. D. G. did not think the test would be conclusive unless made at the same time and in the same field. *Query*—How long will the effect of manure, applied at the rate of 10 to 12 (four-horse) loads per acre, be apparent? *Answer*—That is owing to the amount of time in the soil; if sufficient the effect of the manure will last through a rotation. How many loads do you apply per acre? About 12 fresh from the stable. If thrown out into the yard and left over through summer, that amount would, according to Ed. H. Matthews' statement, dwindle to 3 or 4. He thinks that estimate not far from correct. All is saved by applying direct from the stable, viz: Evaporation, waste and liquid loss.

D. G. thought there was no loss from any of these sources if the manure was kept piled and tramped by cattle. Mr. P. said most farmers were not so favorably situated as D. G. with dish-shaped yard to admit of piling successfully. D. G. said he had tried no plan so satisfactory as piling; less waste, no firing. Using dry earth on the pile as an absorbent increases the bulk wonderfully.

I. M. Price thinks he has learned something from the previous year's operations. He paid (last year) considerable attention to the manure heap. He put all his accumulations, fifty cords, on his meadow. It was a compost of barn-yard manure, earth and plaster in alternate layers. This was used on the poorest part of his meadow and gave him the best and heaviest grass on the field. On his corn ground he put some during the winter and some this spring, but has seen no difference in the crop; with his compost he was carefnl to use plenty of plaster at the rate of say 200 lbs. per acre. He thinks it pays to pile wheat manure less in the spring with earth and prevent the shrinkage.

B. McLain Hardesty is becoming every year more careful in saving and enriching his manure. In application he thinks there is a great loss in distributing on snow—for the last few years he does not apply on snow. He prefers to pile and compost and retain the ammonia by using plaster. He generally has a pile of fence-corner stuff. If he has any way of covering it in winter to prevent freezing, he uses it as an absorbent.

Some years ago he put the sediment of an ice-pond, which he supposed contained the concentrated fertility from the surrounding hills, into his barn-yard, but it acted like literal poison. It ruined everything wherever it went. Came out of the manure stiff.

Jos. Bosley has learned nothing new the past year on this subject. He has been endeavoring to put everything with fertilizing qualities in it, into the barn-yard. He has been making a little more straw and corn-stalks and a little more manure. What he makes in winter he tries to keep warmed up and piled up. If he cannot plow in, he puts on top. He does not get half his straw in the stables; the rest he works in and gets decomposed. Throws on a little plaster occasionally; his manure never burns. After harvest he throws up in the yard. He manured this year after early spring, let lie till after harvest and plowed under; some very deep.

Club adjourned to meet November 6th, at the residence of Edwin Scott. T. G.

Balto. Co., October 25th, 1875.

Clover Turned Under.

The *Rural Southland* says that a Mr. J. Gregory, a few years ago, moved from Tennessee and bought a plantation in Murray county, Georgia. The land at the time he purchased it, with a good season, would produce ten bushels of wheat per acre. In October, Mr. Gregory sowed broadcast fifteen acres of white Boughton wheat, one bushel to the acre, and in February following, he sowed the same ground in red clover, sowing broadcast in two ways, one bushel to eight acres. He harvested ten bushels of wheat per acre, and cut a fine crop of hay the same season. The next year he mowed two crops of good clover hay, averaging two tons per acre. The third crop grew up from four to eight inches high, and in October he plowed the clover under; plowing deep and subsoiling; sowed one bushel of white Boughton wheat per acre. The result was an average of thirty and one-half bushels of choice wheat per acre. Thus you will see that the only manure used to improve the land and get thirty and one-half bushels of wheat, where he could only raise ten, was to plow under deep a good crop of clover, and subsoil.

To the Patrons and Farmers of the North.

The following address by D. H. Jaques, Esq., of South Carolina, an ex-deputy of the National Grange, deserves attention and wide reproduction, and we print it here as especially pertinent in connection with the Agricultural Department's paper on Maryland and her resources, elsewhere given, in part, in this issue:

There are always individuals and families in every community, who, for various reasons, find it necessary or desirable to change their location. They want cheaper land, a more fertile soil, a more genial climate, or other advantages, not possessed where they are. The West suggests itself, because everybody goes West. We have nothing to say against the West, but we believe that the South offers to-day still greater advantages, and we desire to say so, especially to our brothers of "the noble Order of Patrons."

1. In the first place, the cheap land, required by the great majority of immigrants, is here to be had, and, that, too, without going out into an

unsettled wilderness to find it. Plantations, farms, and desirable forest lands, in the vicinity of towns and villages, and on railways and navigable streams, can be bought for from five dollars to ten dollars per acre, or even less.

2. While there are large areas of light, sandy soil in the Southern States, there is also much land of unsurpassed fertility, and capable, under high cultivation, of producing crops heretofore undreamed of. The lighter soils, of what are called the "piney woods," are by no means so poor as the new comer from the North is apt to think them, but can easily be brought up to a high state of productiveness, as the few farmers who have managed them judiciously have demonstrated. They are of remarkably easy cultivation.

3. We have a charmingly mild and genial climate of unsurpassed healthfulness. While our summers are no hotter than those of the North, the nights in the country being invariably cool, our winters are simply delightful, and can in no way be better described to the Northern mind than as a perpetual "Indian summer." Agricultural operations go on every day in the year, snow and frost never preventing, and it is during the cool season that the heaviest work of the farm such as clearing land, building fences, digging ditches, hauling manure, and breaking up the soil, is done. Cattle, where properly cared for, are sheltered at night during the winter, and receive some a small amount of green or dry forage in their pens, but get the greater part of their food from the fields and "cane brakes." In the kitchen garden, crops are growing at all seasons of the year.

We have spoken of the climate as of unsurpassed healthfulness. As a general statement, applied to the South as a whole, this requires no modification. The only exceptions are parts of the low country, or coast region, and the borders of some of our large rivers, where fevers prevail during the summer.

4. The immigrant will find here the established communities, the churches, the schools, and the other advantages of long settled countries, which only require a denser population to give them any desirable development.

Settlers, regardless of their political or religious opinions, will be cordially welcomed, and all their rights and feelings respected. If worthy of consideration and esteem anywhere, they will receive them here.

To Patrons of Husbandry we say, as a brother, and knowing well the feelings of our Order in the South, a warm fraternal "grip" of welcome and all the aid and comfort that we are able to give, await you wherever a Grange exists. For the proof come and see us.

The best way to immigrate to the South, or anywhere else, is in organized companies, of which we shall have more to say in another number; but where such companies cannot be organized, come in families, or singly, and, in any case, you will be warmly welcomed.

An English co-operatice cotton manufacturing company at Spartansburg, South Carolina, has succeeded in interesting the Fall River, Mass., cotton operatives in the subject of emigrating to the South to such an extent that a colony is being organized to settle near Spartansburg.

Duchesse d'Angouleme Pears in England.

The *Garden*, of October 9, says: "We fear we have done scant justice to this pear, fearing that our climate was not warm enough for it. We find, however, it is of fair quality in Kent, and it is abundant in the fruit shops at Turnbridge Wells. The fruit, however, though good, is not so fine as that one sees in France, nor nearly so good as those sent us from Virginia last year. It is clearly a pear greatly influenced by climate, and though useless in cold parts of England, worth a place in favorable parts of the South." The pears from Virginia, alluded to are doubtless those sent over by our occasional correspondent, Mr. G. F. B. Leighton, of Norfolk. That gentleman lately wrote us that he finds blankets better than drawers for ripening specimens.

Lawn, Flower Garden and Greenhouse.

Deciduous trees and shrubs may be planted out until frost closes the ground, but the earlier the better. Select small or medium-sized trees rather than large ones, as they are less likely to die or suffer from removal.

Complete the division and planting of herbaceous perennial plants before severe cold, and give a protection of straw or evergreens through the winter. Dahlia and Canna roots should be taken up, as also those of Gladiolus, Tuberose and Tiger Lily. Beds of Hyacinths, Tulips, Crocus and Snowdrops may still be planted. When this is done, cover with a layer of manure.

In the greenhouse, rose cuttings should be made before frost nips the shoots, and stuck in sand either in the greenhouse shelf or in a cold frame. Verbena cuttings may also be put in now. Do not keep them too damp or they will rot off. Hyacinths and Tulips in pots should not be brought into the light and heat until they have filled the pots with roots. Have cold frames made frost-proof now, and prepare shutters to put on when the nights become severely cold.

Sketches of Travel.

BY JANE BOSWELL MOORE BRISTOR.

A short distance from Sea Grove is Cape May Light-house, a visit to which should not be neglected by the stranger. No less than five different lights are in full view of the house after sunset, and their ruddy gleam across the waves adds not a little to the picturesqueness of the place. The breakwater at Cape Henlopen is opposite, and it is not uncommon to count an hundred vessels anchored there, waiting a favoring breeze.

This part of the beach, extending also for miles above, but not at Cape May City, is, after high tides, almost ·.ved with pebbles and stones of great beauty, among them the Cape May diamonds, which are often cut and set in rings. Small pieces of deep red coral, bright tinted and veined pink stones, impure agates, chalcedony, jet black stones, rich yellow, china-like, and occasional blue ones, are found, worn by ocean waves into perfect smoothness and shape. "Pebble gathering," and "lot choosing" seemed to be the fashionable amusements of Sea Grove. The light-house, for many years in charge of the

father of one of Baltimore's most respected citizens, is a tower raised one hundred and fifty-two feet above the sea. Incredible as it appears, its light is said to have been seen forty-two miles away.

Before the breakwater was built, Mr. Foster, tells us, he has "known thirteen sail to come ashore in a single night. Some were gotten off, and others went to pieces." About three miles distant is the old church of Cold Spring, which, in seventeen hundred and fourteen, had Rev. John Bradnor for pastor. The grave-yard covers some ten acres. In one spot are fourteen graves of the Whilldin family, an honorable name in the records of the State.

The gray marble is in excellent preservation and the words

"JOSEPH WHILLDIN,
Died seventeen hundred and forty-five;"

and "MARY WHILLDIN,
Died, seventeen hundred and forty-three,"

are clear and well cut.

The Revolutionary war, the Declaration of Independence, the growth of a nation, the war of eighteen hundred and twelve, the late desperate struggle, and the changes which these involve, all have passed since the sleepers lay down to rest. But the patriotism of these tried souls is still in remembrance. In the dark days of the Revolution, when starvation faced the soldiers, the people of Cape May "boiled out, strung and dried many clams, and sent to the army." They took also this solemn oath of allegiance: "I do sincerely profess and swear I do not hold myself bound by allegiance to the king of Great Britain, so help me God. I do sincerely profess and swear, that I do and will bear true faith and allegiance to the Government established in this State, *under the authority of the people*, so help me God. Seventeen hundred and seventy-eight." It is signed by Matthew Whilldin, Humphrey Stites and three others of the Stites family, the Hughes, Leamings, Schellingers, and others whose descendants are in the neighborhood.

Reluctantly we leave the ocean, with its ever-changing surf and tides, its roar that was constant music in our ears, the smooth long line of beach, paved with gems gleaming like rare brilliants after each receding tide, the white sandy country that looked like snow in the moonlight, the deep blue of the lake, and the sky which is truly left behind, when one goes from the sea-shore to the city.

Over level country, through quiet villages, Glassboro,' Vineland and others, we ride in the cars of the West Jersey Railroad, to Philadelphia. We have been there many times, but now pay our first visit to old Swedes church, near the Navy Yard, once known as Wicaco, meaning in the Indian tongue, "pleasant place." It is probably the oldest church in the country still open, and in good repair, the present brick building being one hundred and seventy-five years old. Wilson, the ornithologist, is buried here. Rev. Dr. Clay, one of the former rectors, gives a very interesting account of the early settlement in a little book called "Annals of the Swedes." The inscriptions on these quaint old gray stones are full of interest. Two small stones joined read thus:

"Here lyeth the Body of Peter, the son of Andreas Sandal, minister of this church, who dyed April, A. D. seventeen hundred and eight, aged two years——months."

"Here Allso lyeth the Body of Andreas, son of Andreas Sandal, who dyed, Avg. thirteenth, A. D. Seventeen hundred and eleven, aged—— weeks and two dayes."

On the other side:

"We are but of yesterday, and know nothing.
Our days upon earth are a shadow."

The coming Centennial, is, of course, the chief object of interest. Keyser's Guide to it, and the Park, bring attractive points before the eye of a stranger, letting us know also why they are attractive. We learn from it that Fairmount Park comprises nearly three thousand acres, bordering and including the Schuylkill river, for more than seven, and the Wissahickon for six miles. It has nearly four hundred thousand trees, and two hundred thousand hard wooded shrubs and vines. There are twenty small streams in the Park, with medicinal and many other springs. The old home of Robert Morris, whose financial ability and measures sustained the credit of the colonies, and were largely instrumental in bringing the Revolutionary war to a successful end, is here, the cottage of Tom Moore, the Irish Poet, Belmont, Lansdowne Mansion, Mt. Pleasant, Fort St. Davids, Hermit's Well, Lover's Leap, the Caves, Ravines Glen, Bridges, Fountains, Pool, etc., attract many visitors, and also the immense buildings of the Centennial Exhibition, which will be better seen in the Spring.

From its broad acres, busy Chestnut street, is a contrast indeed. We spend an hour at Queen's, looking over microscopic marvels. What is this piece of beautiful lace work, woven by no mortal hand? Only the eye of an insignificant, short-lived, but destructive moth. On this glass, a close observer might with some pains discover the faintest of dots, but they are embryo oysters, and some have their mouths open. This sea-worm is covered with tiny but perfect anchors, which serve as adherents and supports, while the sea limpet shows a tongue so sharp, that it cuts through solid oyster shells with ease. Probably few are more curious than the coscinodiscus radiatus on glass, which if we had seen it in the glazier's box, we should have thought perfectly blank, but under the microscope, what do we find? A shell of perfect and exquisite formation, magnified to the size of a silver three-cent piece. It is one of a layer, extending from Washington to Richmond,—thus proving the earth to have been under water. We may trace the vegetable origin of coal in these grains from New Castle filled with fibres of wood, prints of leaves and bark; white sea sand no less betrays itself, by long white sprays interspersed, invisible to the naked eye, but proving to be minute yet perfect branches of coral. With awe we take up the Atlantic soundings: tiny grains brought from two miles of ocean depths. Are they simply rough sand or tiny ground stones? No, but shells of great smoothness and beauty, glistening like mother of pearl, worn and polished by ocean waves.

[TO BE CONTINUED.]

The American Farmer.

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BY SAML. SANDS & SON,

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One Page.....	20.00	45.00	75.00	130.00

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Transient Advertisements payable in advance—all others quarterly.

Advertisements should reach us by the 20th of the month, to secure insertion in the succeeding issue.

NOVEMBER 1, 1875.

The New Volume.

We trust our friends will do all they can to enlarge the subscription list of the *Farmer* for next year. We intend, so far as we have the ability, to make it worthy of their commendation. We can promise, no effort or disposition shall be lacking on our part to make it continue to deserve the favors it has in the past received from the agricultural public.

For the coming year, we have determined to abandon the offer of *premiums* for subscribers. We have always believed the paper worth the price we charged for it; but we have heretofore offered these premiums to stimulate those who were willing to give extra time and trouble to increasing our list. We are very frank to acknowledge tnat this system has not worked to a great advantage. Although a very large proportion of our subscribers come in clubs, it is a pleasure and pride for us to be able to say that in most cases they are kindly forwarded by friends, who not only do not ask, but who in most cases are careful to say they do not wish, any premiums to which they might be entitled. This is of course very gratifying to us, and renders the premiums superfluous.

Our friends will kindly remember, however, that it is important for us that our lists should continue to increase, since upon the number and character of our readers depends our advertising patronage.

We will therefore be willing and glad in every case, where parties have the time and facilities to make up clubs for us, to give either cash commissions or compensate them in any other desirable way for their efforts. Will such kindly communicate with us?

The subscription price will remain as before—$1.60 a year, including postage, and five or more copies $1.10 each.

The Preservation of Fodder Corn.

The summary of the pamphlets of M. Goffart, admirably rendered by our correspondent, Dr. G. W. Briggs, cannot fail to attract attention. The importance of the subject is not likely to be under-estimated, especially by farmers who are engaged in dairy farming,—the process described offering an escape from the evils attendant upon the use of dry forage through our long winters. We are much indebted to Dr. B. for this *resumé*, the conclusion of which will be given in our next issue. The subject is one of so much interest, that as soon as we saw that M. Goffart had published the results of his experience we immediately ordered the work, and sent it to Dr. Briggs, knowing his interest in the subject.

☞ We call attention to the advertisement of McGlannan's Horse and Cattle Powders. Persons who have used them testify in strong terms to their efficiency.

☞ The old firm of F. C. Grange & Co. has been dissolved and both the partners will continue the business of importing and selling German Potash Salts. Mr. W. G. Price, Jr., will continue at the old stand, 103 West Lombard St., and the new concern of F. C. Grange & Co. may be found at 47 Light St.

Yield of Corn with the Gunpowder Club.

We are informed by the Secretary, that the test acres, so far as measured, give the following results: .T .T Gorsuch's 27½ bbls. Joseph Bosley's, 27 1-5 bbls. The latter's five-acre lot will go near an average of 25 bbls. Joshua Gorsuch and W. W. Matthews each on their test acres exceed 25 barrels.

Three Numbers Free.

We continue our offer to send to all new subscribers, whose names are received before the end of the year, the last three numbers of the present volume FREE.

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Tanner and Newman.—The McGinnis Harrow.
Patapsco Chemical Works.—Oil Vitriol and Chemicals.
W. A. Myers.—Fowls for Sale.
J. J.—Man wanted to attend to Stock.
Piedmont Guano and Manufacturing Co.—Piedmont Guano.
Samuel Sands.—Farm for Sale.
H. S. Goodspeed & Co.—Agents wanted.

Baltimore Markets—October 30.

The quotations below are Wholesale Prices.

Breadstuffs—*Flour*—Market quiet and prices barely steady. We quote Howard Street Super $4.25@5.00; do. common to fair Extra $5.25@5.50; do. good to choice do. $5.75@6.00; do. Family $6.00@7.00. Ohio and Indiana Super $4.25@5.00; do. Extra $5.25@6.00; do. Family $6.25@7.00. City Mills Super $4.75@5.50; do. Rio brands Extra $7.00@7.25. City fancy brands $8.75. Rye Flour, $5.00@5.75. Corn Meal, city, $4; Western, $3.25@3.50.

Wheat.—Receipts large. Market not very active, but prices firm. Southern red we quote at 130@142 cents for good to prime; amber, good to extra, 147@155 cents; white 120@160 cents; Western, No. 2 red 138 cents.

Corn.—Small lots new Southern coming in. Sales rather light. Quotations: Southern yellow 74 cents; do. white 74@78 cents; Western mixed 74 cents.

Oats.—Dull, with light receipts. Southern quoted at 45@47 cents; Western mixed 42 cents.

Rye.—Demand and receipts very light. Good to prime quoted at 75@80 cents.

Broom Corn.—Quiet. Prices range from 7 to 9¼ cents.

Cotton.—Fairly active, but with a declining tendency. We quote Middlings, 13¾@13¼ cents; Low Middling, 13@13¼ cents; Good Ordinary, 12¾@12¼ cts.

Hay and Straw.—Dull. Cecil Co. Md., Timothy, $24@26. Mixed, $18@23; Clover, $18@20. Wheat Straw $9@10; Oat, $14; Rye, $17@18 ₮ ton.

Live Stock.—*Beef Cattle*—Rather dull at last market. We quote best on sale, 5¾@6¼ cents; generally rated first-class, 4¾@5¼ cts.; medium a good fair quality 4@4¼ cents; ordinary thin Steers, Oxen and Cows, 2½@3¼ cents. *Hogs.*—In fair demand with quotations at 10@11 cents. *Sheep.*—Dull, with sales at 4@5¼ cents. Lambs, $2@4 ₮ head. Stock Sheep, $2 00@3.50 ₮ head.

Mill Feed.—City Mills Middlings, $23; Brownstuff, $20; Western Bran, $17@18; Shipstuff, $20 ₮ ton.

Provisions.—Bulk Shoulders, 9¼ cents; do. clear-rib Sides, 12¾@13 cents; Bacon Shoulders, 10¼ cents; clear-rib Sides, 14¼ cents; Hams, 16 cents; Lard, 15 cts.; Mess Pork, $23. *Butter.*—New York tubs, 32@35 cents; Glades, 26@28 cents. *Cheese.*—New York State factory, 13¼@14 cents; Western, 13@13¼ cents.

Salt.—Ground Alum, $1.15@1.25; Fine, $2.15 ₮ sack; Turks Island, 35@40 cents ₮ bushel.

Tobacco.—Market quiet and prices steady. Of Maryland, receipts are mainly of new ground leaves, which sell readily. We quote Maryland frosted $5.00@6.00; sound common, $6.50@7.00; medium, $8.50@9.50; good medium, $9.00@10.00; bright red to yellow, $17@20.00; fancy yellow, $20.00@30.00; Virginia common to good lugs, $6.50@8.50; common to medium leaf, $9.00@12.00; good to fine leaf, $13.00@16.00. Selections, $17.00@20.00.

Wool.—Receipts light; market quiet. Unwashed 30@34 cents; Tub-washed 47@50 cents; Burry 25 cents.

1000 Agents wanted at once for a New Religious Work popular with all denominations, and sure to sell in every family. Positively the very best chance of the year for first-class agents. For circulars address n3t H. S. GOODSPEED & CO., 14 Barclay St., New York.

WANTED.—To employ an HONEST AND CAPABLE MAN to go to North Carolina, to attend to live stock, a Scotchman preferred, and a man with a family, and his wife a good butter-maker. Place healthy, and churches and good schools convenient. Address J. J.
n *Care Editors American Farmer.*

GUNS AND PISTOLS.

Just received a large assortment of BREECH AND MUZZLE-LOADING GUNS, with a large assortment of SPORTSMEN'S GOODS. Repairing done with neatness and despatch.

WILLIAM HARRIS,
oc-6m 116 W. Pratt St., one door from South.

Farm in Baltimore Co. (Md.) For Sale.

I offer for sale my FARM of 150 acres, at 15 mile-stone on the York Turnpike, 1 to 3¼ miles of five stations on the Northern Central Railway. About 120 or 125 acres arable land, the balance in thriving young timber; fronts half a mile on each side of the turnpike. The soil is of excellent quality, and produces crops of every description grown in this section. It would make an excellent dairy farm, having plenty of springs and running water, and shade for cattle and range for hogs. Its proximity to Baltimore, on one of the best turnpikes, renders it suitable for gardening or small fruits and trucking,—a trip a day being easily accomplished, with full time for effecting sales. For healthfulness there is no spot in the world to excel it. It is in the neighborhood of and forms a part of that tract of country known as the Friends' Settlement, where, with good cultivation, 12 to 20 barrels of corn and 12 to 25 bushels of wheat are raised. The improvements are mostly old, but extensive and comfortable; and there are several sites admirably adapted for dwellings on the premises. To an enterprising man who would divide it off in lots, an excellent opportunity for a speculation is afforded, as lots in the same vicinity, not a mile from this, have been sold from $300 to $500 per acre. Not being able to reside in the country, it has been rented to good tenants, who have done well with it for several years; but being desirous of changing the investment, I will sell or exchange it for city property, which I can have under my more immediate direction; or a very liberal credit will be given on the principal part of the purchase money. To an industrious and intelligent man this place offers peculiarly favorable advantages. The price is $100 per acre, which is probably less than any improved land can be bought for between it and the city. Mr. Royston, the tenant, will show the place to any one wishing to purchase. Address

SAMUEL SANDS,

OFFICE AMERICAN FARMER, 9 NORTH ST.

Baltimore, Md.

M'CINNIS HARROW

(PATENTED OCTOBER 12TH, 1875.)

The frame of this Harrow is so arranged as to receive Harrow or Cultivator Teeth, or Cultivator Teeth in the front and Harrow Teeth in the rear beams.

The teeth are instantly adjustable to any angle, vertical or backward, or forward slant.

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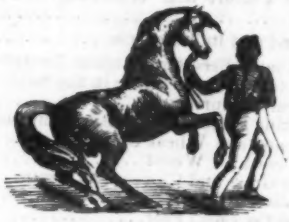

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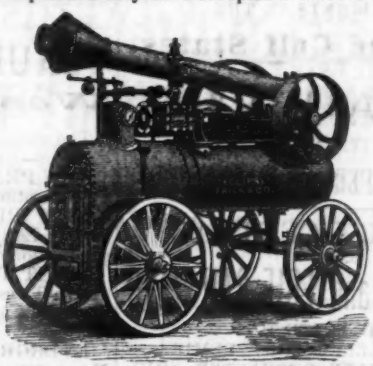

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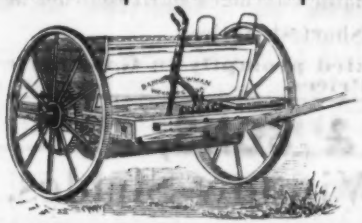

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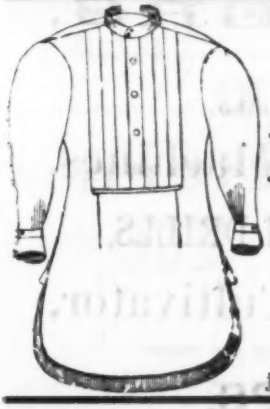

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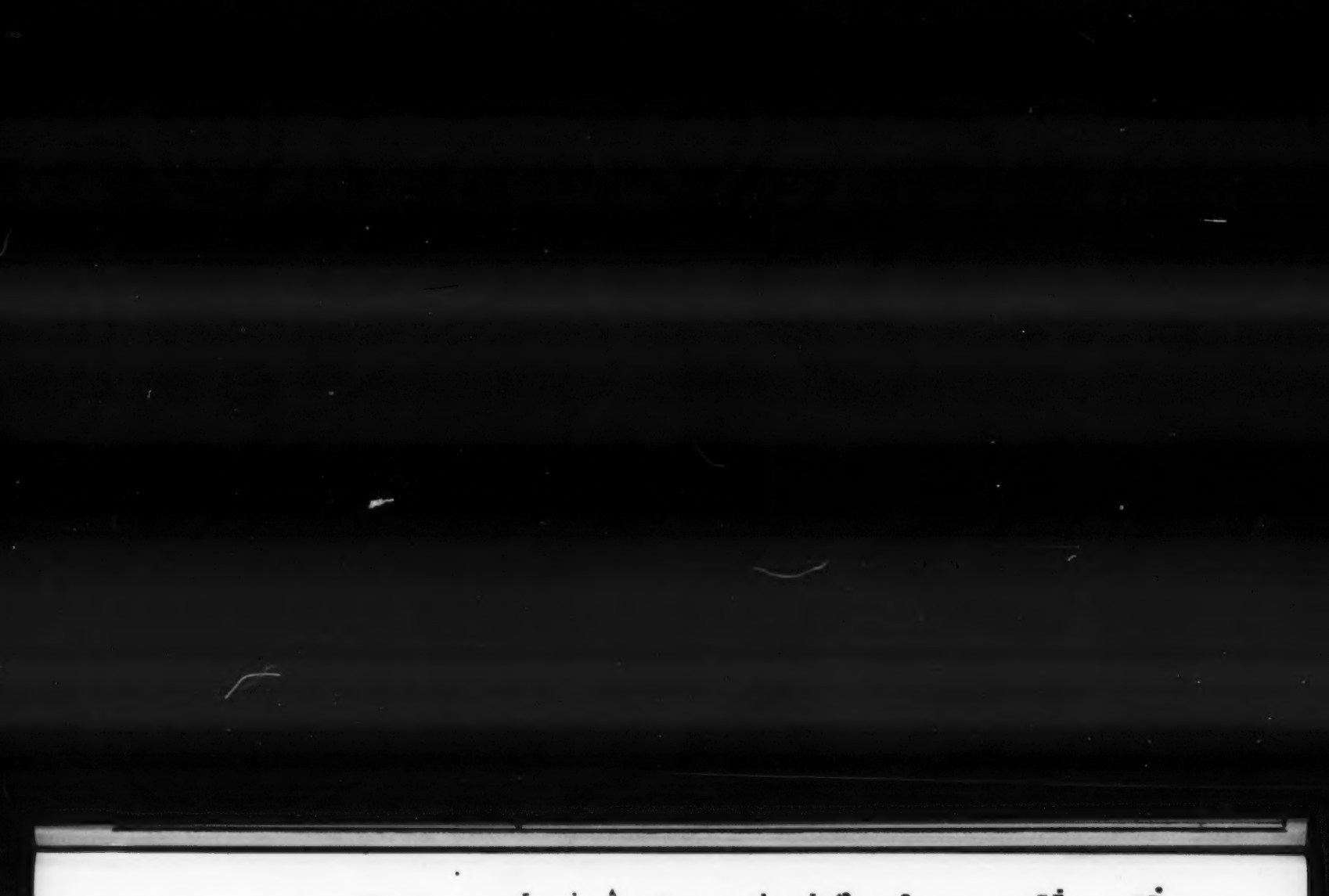

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